DOCUMENT RESUME

ED 365 331 IR 054 778

TITLE	The Commission on Preservation and Access Newsletter, 1993.
INSTITUTION	Commission on Preservation and Access, Washington, DC.
REPORT NO	ISSN-1045-1919
PUB DATE	93
NOTE	70p.; For newsletter issues 41-51, see ED 354 008.
AVAILABLE FROM	Commission on Preservation and Access, 1400 16th Street, N.W., Suite 740, Washington, DC 20036-2217.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Commission on Preservation and Access Newsletter; n52-62 Jan-Dec 1993
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Academic Libraries; Administrators; Conferences; Donors; Grants; Higher Education; Library Cooperation; *Library Materials; Organizational Communication; *Preservation
IDENTIFIERS	Electronic Text; *Library Materials Conservation

ABSTRACT

This document consists of all 11 issues of this newsletter published in 1993 (November-December was a combined issue). The newsletter reports on cooperative national and international preservation activities and is written primarily for university administrators and faculty, library and archives administrators, preservation specialists and administrators, and representatives of consortia, governmental bodies, and other groups sharing Commission on Preservation and Access goals. Topics covered in the 1993 issues include: (1) organizational activities, such as special projects and conferences; (2) grants received by the commission and their purposes; (3) reviews of research and scientific reports on topics pertaining to preservation; (4) related activities conducted by other organizations and institutions; and (5) preservation programs abroad. Inserts on special topics are included in two of the newsletters: "Opto-Electronic Storage--An Alternative to Filming?" (Hartmut Weber) and "Implications of Electronic Formats for Preservation Administrators" (Peter Jermann). (KRN)

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The Commission on Preservation and Access

NEWSLETTER

NUMBER 52-62

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 52

JANUARY 1993

Bellagio Conference Underscores Transatlantic Scholarly Links

The development of new scholarly linkages between Europe and the United States in all fields that depend heavily on the deteriorating literature printed on acid paper is a major goal of the Commission's upcoming conference on preserving the literary heritage to be held June 7 to 11, 1993, at the Bellagio, Italy, Study and Conference Center. The conference is supported by The Rockefeller Foundation (see July 1992 newsletter).

Twenty-three participants, 13 from Europe and ten from the U.S., have been invited to meet in plenary sessions and small working groups to define the current state of affairs and recommend strategies for action. Responding to papers prepared and distributed in advance as well as to short presentations at the conference, the working groups are charged with thinking through the following issues:

- *What efforts are needed to raise awareness among scholars and other interested parties?*
- *How can each country determine where and in what respects the worst problems (greatest opportunities) exist?*
- *What role can scholars play?*
- *What resources are needed and how might they be obtained?*
- *How can transatlantic collaboration be heightened?*
- *How can we form an effective scholars' network to carry on the work begun at the conference?*

From its experience with scholarly advisory groups in this country, the Commission recognizes the importance of scholarly participation in the preservation process. Because scholarship knows no political boundaries, it is critical that we develop a capacity

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New and Retiring Board Members

The following individuals have accepted invitations to join the Commission board:

Betty G. Bengtson, Director of University Libraries, University of Washington, Seattle

Klaus-Dieter Lehmann, Director, Die Deutsche Bibliothek

Winston Tabb, Associate Librarian for Collections Services, Library of Congress

Nicholas Veliotes, President, Association of American Publishers

Election of Commission members is based on personal qualifications and interest, and not as representatives of organizations.

Retiring members **James F. Govan**, University Librarian, University of North Carolina at Chapel Hill (retired), **Henriette D. Avram**, Associate Librarian for Collection Services, Library of Congress (retired), and **Donald S. Lamm**, President, W.W. Norton & Company, were honored for their service to the Commission during its annual meeting in October, 1992.

The Pennsylvania State University Becomes Commission Sponsor

The Pennsylvania State University has become a sponsor of the Commission, increasing sponsorship to 52 institutions. The support of sponsors who are interested and involved in the nationwide preservation and access agenda is crucial to the Commission's ability to be responsive to emerging needs and possibilities. All Commission sponsors receive expedited mailings of newsletters and reports, as well as complimentary additional copies upon request. They also are entitled to borrow the Commission's preservation exhibits with no service charge.

New Paper Explores Mix of Film, Digital Technologies

A Hybrid Systems Approach to Preservation of Printed Materials, a new Commission publication developed at the request of the Technology Assessment Advisory Committee (TAAC), provides an extensive analysis of the interrelationships between microfilm and digital technologies applied to the preservation of and access to deteriorating print materials. The 68-page paper was written by Don Willis, Vice President of Electronic Product Development for University Microfilms International, in consultation with TAAC.

In reviewing preservation technologies, the author concludes that a hybrid system — one that combines both film

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[illegible]

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Bellagio Conference

Continued from p. 1

for international collaboration to save intellectual resources of value to the international scholarly community. The Commission expects to publish a summary of the deliberations to serve as a guide for productive cooperative action.

International Participants

Dr. Birgit Antonsson, President
Swedish Research Council
The Royal Library
Stockholm, Sweden

Professor Josep M. Bricall, Rector
Universitat de Barcelona
Barcelona, Spain

Father Hervé Carrier
Pontificum Consilium De Cultura
The Vatican, Italy

Professor Pieter J.D. Drenth, President
Royal Netherlands Academy of Arts and Sciences
Amsterdam, The Netherlands

Professor Bernhard Fabian, Englisches Seminar
Westfälische Wilhelms-Universitat
Munster, Germany

Professor Marc Fumaroli
Collège de France
Paris, France

Professor Christoph Graf, Direktor
Schweizerisches Bundesarchiv
Bern, Switzerland

Professor Knut Kleve
Klassisk og Romansk Institutt
Oslo, Norway

Dr. Alison de Puymege, Assistant Secretary General
Standing Conference of Rectors, Presidents, and Vice-Chancellors of the European Universities
Geneva, Switzerland

Professor Hinrich Seidel, President
Standing Conference of Rectors, Presidents, and Vice-Chancellors of the European Universities
Universität Hannover
Hannover, Germany

Professor Salvatore Settis
Scuola Normale Superiore
Pisa, Italy

Dr. David G. Vaisey, Bodley's Librarian
Bodleian Library
Oxford, England

Dr. Erica Varese, Head of Unit DG X, Culture
Commission des Communautés Européennes
Brussels, Belgium

U.S. Participants

Richard Brilliant, Professor
Department of Art History and Archaeology
Columbia University

George F. Farr, Jr., Director
Division of Preservation and Access
National Endowment for the Humanities

John Heilbron, Vice Chancellor
University of California, Berkeley

Mark Jordan, Associate Professor
Medieval Institute, University of Notre Dame

Stanley Katz, President
American Council of Learned Societies

Stuart Lynn, Vice President
Information Technologies
Cornell University

J. Hillis Miller, Professor
Department of English and Comparative Literature
University of California, Irvine

Patricia Battin, President
Henry Riecken, Senior Program Officer
Hans Rütimann, International Project Consultant
Commission on Preservation and Access

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The Commission on Preservation and Access was established in 1986 to foster and support collaboration among libraries and allied organizations in order to ensure the preservation of the published and documentary record in all formats and to provide enhanced access to scholarly information.

The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialists and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor.

New Paper Explores Mix of Technologies

Continued from p. 1

and digital imaging — could well offer the best overall design for current preservation needs, while a digital image based preservation system is the most promising future solution for printed materials. In his recommendations, Willis states that preservation goals will be met when preservation managers and technical experts work together to develop this hybrid science. A long-range preservation system will be designed to take advantage of the strengths, access characteristics, longevity, and cost of each storage product to produce the greatest benefit at the least cost.

The publication examines the trade-offs in selecting one technology over another and the advantages, disadvantages, and costs of digital image and micrographics preservation systems. Appendices explain the importance of resolution as a key parameter when designing a preservation system. A discussion of image resolution is illustrated with an extensive series of figures and tables.

A Hybrid Systems Approach to Preservation of Printed Materials by Don Willis, November 1992, 68 pages, is available for $10.00. Prepayment in U.S. funds is required, with checks made payable to "Commission on Preservation and Access" and sent to: Communications Assistant, Commission on Preservation and Access, 1400 16th Street, N.W. Suite 740, Washington, DC 20036-2217. Commission sponsors receive all publications at no charge.

Funding for Selected NEH Programs
(figures in thousands)

		FY 1992 Approp.	FY 1993 Approp.
National Endowment for the Humanities	TOTAL	$175,955	$177,413
Humanities Projects in Libraries and Archives		2,750	2,727
Preservation and Access		24,043	23,102
Research Programs		17,329	17,886
Challenge Grants		12,392	14,228

— From *ALA Washington Newsletter* October 23, 1992

PRESERVATION MANAGEMENT FOR COLLEGE LIBRARIES
July 22-30, 1993
Wellesley College, Massachusetts

A seminar designed for the librarian responsible — often on a part-time basis — for planning and coordinating preservation activities for the library's circulating collection.

The 20 applicants selected to attend the seminar will develop priorities, an action plan, a timetable, and drafts of critical documents tailored to their own libraries.

Sponsored by SOLINET and
The Commission on Preservation and Access

For more information contact:
Amy Bernath, SOLINET Workshop Coordinator
1-800-999-8558 or 404-892-0943, ext. 226
SOLINET
1438 West Peachtree Street, NW
Suite 200
Atlanta, GA 30309-2955

PMC Explores Preservation Function in First Meeting

At the first meeting of the new Preservation Managers Council (PMC) held at Commission headquarters in October 1992, members explored several broad areas for future investigation and development of initiatives. There was a general interest in examining the changing nature of the preservation function within an institution and clarifying its interrelationship with other library and institutional activities and goals; it was suggested that a discussion paper might be used to begin to address this area. Educational efforts — for both preservation administrators and those with whom they work — to advance the understanding of the operations and needs of large preservation programs also were identified as a possible initiative. The group also discussed a need for an interchange between archivists and librarians concerning their points of commonality and divergence relating to the broader definition of preservation.

The group decided that future meetings would be held at Commission headquarters in early Spring and mid-Fall. In keeping with the practice of other Commission groups, the PMC will be developing its own agenda, determining where the Commission can be of assistance. PMC members are expected to represent the preservation community during the meetings and to serve as a communication link to the broader preservation constituency.

PMC members are: **Margaret Byrnes**, Head, Preservation Section, National Library of Medicine; **Ellen Cunningham-Kruppa**, Preservation Officer, University of Texas, Austin; **Richard Frieder**, Head, Preservation Department, Northwestern University; **Kenneth Harris**, Director for Preservation, Library of Congress; **Carolyn Clark Morrow**, Malloy-Rabinowitz Preservation Librarian, Harvard University; **Barclay Ogden**, Head, Conservation Department, University of California, Berkeley; and **Christine Ward**, Chief, Bureau of Archival Services, New York State Archives and Records Administration.

Project IBID: Status and Plans for the Future

Project IBID, an effort to investigate the possibility of enhancing access to out-of-print (OP) books by the use of digital technology, has met with considerable interest on the part of publishers, both academic and commercial, during an initial exploratory phase funded by the Commission. The project, co- directed by College Libraries Committee members Willis Bridegam and David Cohen, seeks to encourage the on-demand printing of digitized versions of OP books needed by colleges for curriculum and instructional purposes. It also will investigate the marketing of such reprints. The co-directors are submitting a grant proposal to the U.S. Department of Education this month. Amherst College, the College of Charleston, the Southeastern Library Network (SOLINET), and the Commission are supporting the proposal with funds and in-kind contributed costs.

In its two-year demonstration, Project IBID will seek to determine if it is feasible to keep needed books available in the marketplace by bit-mapping them with high resolution scanners and by using Xerox Docutech equipment to produce a limited number of copies of OP books on demand. The initial scanning of 250 titles would take place in early 1994, with on-demand printing done throughout 1994-95. More information about this evolving project is available from Bridegam, Librarian, Amherst College, Amherst, MA 01002, and Cohen, Dean of Libraries, College of Charleston, Charleston, SC 29424.

For books are more than
books, they are the life
The very heart and core of
ages past
The reason why men lived
and worked and died
The essence and quintessence
of their lives.

—Amy Lowell

Science Research Agenda in 1993

At their October, 1992, meetings, the newly-formed Preservation Managers Council (PMC) and the Commission board agreed to the further development of a scientific research agenda. Based on evaluations from participants of last September's Science Workshop for Preservation Administrators, the Commission has agreed to convene a one-day planning meeting in February, 1993, followed by a second invitational 2½-day workshop in September, 1993.

The previous workshop, held at the Belmont Conference Center, MD, enabled a small group of scientists and preservation administrators (PAs) to jointly explore how the scientific process can be used to address key scientific and technical issues in the preservation field. The goal was to facilitate the development by scientists and PAs of a viable set of priorities for future research projects. Participants gave a high evaluation to a series of exercises conducted by research teams, who were given assignments to develop science projects within a few hours. In a wrap-up session, participants agreed that an extension of the "research team with science advisor" mode could serve as a strategy for developing a collaborative science agenda, and recommended that the initiative be continued in 1993.

Among a number of conclusions, the group agreed that:

- While scientists are key players in research projects, it is the PAs' responsibility to define the needs for preservation, to oversee research projects, to help translate results and to apply them, and to lead the way to developing useable technologies based on the results.
- Working initially with a smaller number of participants, while not as democratic as a highly inclusive group, facilitates the process of establishing priorities and setting an agenda.
- A workable next step, achieved through the use of research teams, would be the development of no more than four or five well-thought-out research projects. The description of such projects would include priority levels, rationales for their importance, and suggestions for their support and execution.

New E-Mail Addresses

Please make a note of the following new electronic mail addresses for the Commission:

Pat Battin: PBATTIN@CNI.ORG
Maxine Sitts: MSITTS@CNI.ORG

> ***We live in a cultural continuum in which we are free to move back and forth through the centuries. Books are islands in the ocean of time. They are also oases in the deserts of time.***
>
> —Lawrence Clark Powell

Slow Fires: Sequel Under Development; French Version Available

The Commission board, at its annual meeting in October, 1992, approved the development of a film sequel to *Slow Fires*, to focus on preservation and access in the age of electronic data. Terry Sanders of the American Film Foundation, who produced *Slow Fires*, has been engaged to conduct research and develop an outline during the initial conceptual phase of the project.

Meanwhile, a French version of the original *Slow Fires* has been developed by the U.S. Information Agency, which earlier produced a Spanish version of the film. The French language voice over version is available in the hour length only, at the same cost as the English language version — $59.50 plus shipping and handling — from American Film Foundation, 1333 Ocean Avenue, Santa Monica, CA 90401.

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The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

Number 53

February 1993

1992 International Project Update on Microfilming Abroad

A newly-published activity report of the International Project, which draws and expands upon the Commission's *Annual Report, July 1, 1991 - June 30, 1992* features a descriptive listing of microfilming projects in 30 countries. The update also discusses cooperative and national programs, new technologies, mass deacidification, and future priorities. The update on microfilming states:

> *The most prevalent reformatting remains with microfilm; small, medium, and large-scale projects are underway in many countries and the need for an informational infrastructure — bibliographic control — is overwhelming. . . . Progress is being made toward an internationally shared database capacity for bibliographic information about microform masters, nodes for the collection of such data are being developed, and arrangements are being made for the exchange of information among nodes.*

Information about microfilming projects at the collection level includes descriptions and contact points from 30 national libraries that responded to a questionnaire. The results confirm varied conditions throughout the world. For example, the Helsinki University Library reported extensive microfilming not only of Finnish literature, but also of many special collections of Russian and Latvian newspapers. It is expected that during the next ten years, approximately one million pages of Russian newspapers will be filmed. Further information about microfilming projects abroad can be obtained from — and sent to — Hans Rütimann, International Project Director, 312 West 77th Street, #G, New York City, New York 10024.

The International Project 1992 Update is being mailed to the Commission's mailing list. Additional copies are available while supplies last for $10.00, with prepayment by check required (made payable to Commission on Preservation and Access, U.S. funds only). Orders can be addressed to Sonny Koerner, Communications Assistant, Commission on Preservation and Access, 1400 16th Street, NW, Suite 740, Washington, DC 20036.

University of Miami, Mount Holyoke Join Commission Sponsors

The University of Miami (FL) and Mount Holyoke College (South Hadley, MA) have become sponsors of the Commission, bringing the list of supporting institutions to 54. Sponsors include 37 universities; eight colleges; eight public, state, and federal libraries; and one higher education coalition. This broad base of support is essential to the Commission in developing a responsive and flexible approach to nationwide and international preservation and access agendas. Sponsors receive expedited mailings of newsletters and publications, as well as complimentary additional copies upon request. They also are encouraged to borrow the Commission's exhibits with no service charge.

Cornell, Stanford to Experiment with Sharing Electronic Scholarly Resources

Cornell and Stanford Universities have signed a memo of understanding to conduct a one-year project providing experience in the sharing of electronic scholarly resources using the existing national networking infrastructure. Both universities are members of the Commission's digital preservation consortium, which provides an opportunity to conduct the experiment within a larger framework.

Cornell is interested in providing to its users electronic access to a major bibliographic database (GEOREF) that Stanford already has made available on its campus. Cornell has obtained permission from the database producer, the American Geological Institute (AGI) to negotiate a method in which Cornell would act as a remote (additional) user of their material which is maintained on Stanford's computers.

In exchange for the use of this resource, Cornell will offer Stanford the use of the CORNELL DIGITAL LIBRARY (CDL) and its associated client software. CDL was created as the result of a joint project between Xerox, the Commission and Cornell. The CDL currently consists of the full text bit-mapped images of over 1,000 volumes of which 550 are selected mathematics titles with imprints earlier than 1920. The CDL includes not only the digital images of these volumes and their document structure, but also client software — still under development — to browse and view the material over the network.

Preservation of Dance Heritage Focus of Mellon Grant

The Dance Heritage Coalition has received a grant from the Andrew W. Mellon Foundation to identify and develop collaborative methodologies and systems that preserve and make accessible the creative contributions of American dance. During the three year grant period, the Coalition will work in four areas:

Access — to create a national union catalog of dance documentation available to all on a single national bibliographic database.

Documentation — to develop a national documentation strategy for collecting and preserving dance, its choreography and performance.

Preservation — to articulate a systematic national program for the survival of dance documentation.

Education — to provide educational opportunities on various levels in connection with all its activities.

Among the initial projects will be a white paper on options for the preservation of video documentation. The coalition will seek additional funding to tackle cataloging arrearages at the New York Public Library, Harvard College Library, the San Francisco Performing Arts Library and Museum, and the Library of Congress. Finally, the coalition will pursue issues related to copyright and intellectual property, especially of video, in cooperation with interested volunteers from the American Bar Association.

The Core Administrative Committee of the coalition consists of representatives from the four institutions listed above. Margaret Child is meeting with the group as the Commission's liaison.

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Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor.

> ***The library profession is . . . a profession that is informed, illuminated, radiated, by a fierce and beautiful love of books. A love so overwhelming that it engulfs community after community and makes the culture of our time distinctive, individual, creative and truly of the spirit.***
>
> —Frances Clarke Sayers

Improved Reproduction of Continuous Tone Materials Reported by MAPS

A process under development at the MicrogrAphic Preservation Service MAPS, Bethlehem, PA, using direct duplicating film rather than traditional camera film results in "greatly improved reproductions of continuous tone materials on microfilm," according to MAPS personnel. The process involves using a Herrmann & Kraemer camera equipped with halogen lamps and Kodak 2470 direct duplicating film. The 2470 direct duplicating film, commonly used for production of print masters, is a silver gelatin on polyester base and meets criteria for preservation microfilming. The test film was judged "not ideal, but . . . very promising." The 2470 film is better able to reproduce shades of gray than traditional camera film, and resolution was "excellent" — a 14.0 pattern was discernable at a reduction of 14X = 196 lines per millimeter.

Pilot Project Demonstrates CD-ROM, Fiche Products

The Geoscience Information Society of the Geological Society of America demonstrated color and black-and-white end-user formats possible from preservation microfilm during the Geological Society's meeting in Cincinnati, Ohio, October 24-29, 1992. The demonstration featured CD-ROM and microfiche products created from originals of the *New York State Museum Bulletin*, supplied by the New York State Library.

Geologists compared fiche, CD-ROM, and print end-products for legibility and usefulness to research. The demonstration discovered that it is difficult to locate viewing monitors powerful enough to produce suitable scanned images; it appears that access hardware is lagging behind capture capability. The following excerpts are from a report by Susan Klimley, Librarian, Lamont-Doherty Geological Observatory.

. . .

"As geologists examined the materials, questions were posed: How important is preserving the color? Is it better to save more of the literature in black and white? Or spend the premium price for color preservation?

— Geologists for whom color was important oftentimes were unwilling to make a 'decision.' The cost differential was apparent to these people and although many felt color was very important, they saw the reality of the cost figures.

> ***geologists expressed relief that librarians were working on the preservation problem***

— Many geologists suggested being very selective about which maps were preserved in color. Others suggested adding a pattern coding to replace the color coding on the maps.

. . . Many geologists expressed relief that librarians were working on the preservation problem and were sur-

Newsletter Insert

OPTO-ELECTRONIC STORAGE - AN ALTERNATIVE TO FILMING?

Translation of a chapter from the article "Verfilmen oder Instandsetzen? Schutz- und Ersatzverfilmung im Dienste der Bestandserhaltung"

by
Dr. Hartmut Weber

Commission Introduction

To contribute to the continuing discussions of digital technology and microfilming for preservation and access, the Commission presents the following view from Germany. "Opto-Electronic Storage - an Alternative to Filming?" is a translation from German of a chapter from a longer article by Dr. Hartmut Weber, "Verfilmen oder Instandsetzen? Schutz- und Ersatzverfilmung im Dienste der Bestandserhaltung," (Filming or Repairing? Protective and Replacement Microfilming for Preservation) published in Bestandserhaltung in Archiven und Bibliotheken (Preservation in Archives and Libraries), edited by Dr. Weber (Verlag W. Kohlhammer, Stuttgart, 1992). Dr. Weber is the director and department head at the archives administration of the federal State of Baden-Württemberg, responsible for conservation policy in archives and libraries of the State of Baden-Württemberg. He is a member of the Committee on Image Technology of the International Council on Archives and has lectured and written extensively about preservation problems in archives and libraries.

* * *

We would like to explore whether micro-media are safe for the future or whether they will soon be replaced by other storage media, in particular the opto-electronic ones.

As a timely alternative to microfilm for image storage, the optical storage disk, the so-called optical disk, is being considered.[1] In particular, the WORM-disk (write once, read many times) or the medium MOD (magneto optical disk) which can be erased and re-written are pointed out, since recordings on these storage units can be made in-house, while the popular CD-ROM (compact disk read only memory) can only be economically produced industrially and in large numbers.

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[1] **A summarized, up-to-date survey of opto-electronic media presently available, by K. Schlaepfer: "Optical Storage Disks for Archiving Documents. Present Status," in: ARBIDO Spécial: Konservierung-Restaurierung, volume 6 (1991), pages 96-; see also Hans Hagemann, "From Microfilm to CD-ROM," in: Nachrichten für Dokumentation 41, (1990), pages 245-; Wilhelm Lenz, "Optical Disk or Microfilm?" in: Der Archivar 41 (1988), volume 1, columns 99-104.**

The optical storage disk stores coded information by contents or uncoded information by image by means of a digital recording procedure. In principle, it can be compared to magnetic storage units, which can store digitized images in addition to data almost permanently. With the opto-electronic storage procedure, the digitized information is burnt into a metal-coated plastic disk, in the most commonly used procedure for instance by means of a laser beam and an optical system. This results in tiny indentations, "pits," which can then also be recognized by laser optics.

In digital image storage - which is the only alternative to microfilming - the graphic master is read via a scanner and resolved into dots. Compression software makes it possible that the images do not have to be stored in a binary pattern of 1:1, i.e., storage intensively and uneconomically. The recording quality essentially depends on the number of dots into which the graphic master is resolved.

The storage and evaluation of information stored on optical disks necessitates a relatively expensive computer system with suitable components of hardware and software. The stored graphic masters, equipped with search addresses, can be represented on a high resolution screen and/or printed on output devices such as laser printers.

The advantage of the optical storage disk is the relatively quick access to a large number (tens of thousands) of information pieces or documents stored in this manner. The search and response times are in the range of seconds somewhere between those of the magnetic media, which are definitely superior in speed to the optical disk, and those of a microfilm retrieval system.

The recording quality of systems with optical storage disks depends on the performance of the scanners and, with a resolution of 200, 300, or at present maximally 400 dpi, is rather poor in comparison with microfilm with a resolution of practically over 1000 dpi[2] (of the graphic model, not the film): quality typographic resolution in phototypesetting also begins at 1000 dpi. For printed matters and typewritten documents this quality is, no doubt, sufficient, but in case of handwritten documents, pencil notes, etc., the limits are quickly reached where information appears visibly "frayed" into dots. In such systems, the reproduction of grey tones is limited and affects the storage capacity and thereby also the efficiency even more than a higher resolution does. Color reproduction is so far not economically possible with digital image storage.[3]

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[2] The resolution capacity of the films themselves is much higher. A film image of 24 X 36 mm can represent more than 50 million image dots (pixel), i.e., ten times as many as the best scanner-sensor at present resolves (information courtesy Kodak AG, Stuttgart).

Optical storage disks are available in sizes 3 1/2", 5 1/4", 12", and 14". Evidently, a 14" disk of one manufacturer cannot be used with a 51/4" disk drive which the same manufacturer propagates a few years later. But even the same disk size does not guarantee compatibility. There are no national standards for opto-electronic data storage - not to mention international standards. This is particularly true for recording formats. So far, no industry standard given by a manufacturer has become generally accepted. Disks and disk drives by different manufacturers are not compatible, and even the systems of one manufacturer may be incompatible for the same disk size.[4]

The optical disks of all technologies known so far are not age resistant, since the media are very sensitive to oxidation or corrosion. In case of digital recording techniques, only a few "bit errors" are sufficient to make an entire disk illegible. Opto-electronic storage media have been available only since 1982, so that their expected durability could so far only be predicted on the basis of numerous tests with accelerated aging methods.[5] Legibility would be between 10 and 30 years, depending on the recording technique and the disk material. Manufacturers state 50 or 100 years for special combinations of materials such as the gold or platinum basis for WORM disks. Such statements should, however, still be taken with a grain of salt.[6] Professional users in the service sector copy the WORM disks after 10 years.[7] One manufacturer guarantees a durability of 50 years for an erasable, opt-magnetic disk, provided that the disk is copied every 5 years, i.e., newly recorded. This means that the optical storage disk is only conditionally suitable as an archive medium. Provisions must be made for copying the disks at regular intervals, which means reading the old disk and recording the information on a new disk via a computer. Quite apart from the expenditure in machinery, the reservation of computer time and the computer capacity, the necessary disks are relatively expensive, and the old disks, at least the WORM disks, can no longer be used. As a rule, the duplicate can only be used in an identical system as far as hardware and software are concerned.

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[3] Thus, a digitized color image on a photo-CD (Kodak) still takes up memory space of 5 megabytes, even after compression of the original 18-20 megabytes per image, and still does not achieve the reproduction quality of a color transparency.

[4] See K. Schlaepfer: "Optical Storage Disks for Archiving Documents."

[5] A new, comprehensive compilation of literature about durability risks and durability expectations of opto-electronic media by William Saffady, Stability, Care and Handling of Microforms, Magnetic Media and Optical Disks, Library Technology Reports, American Library Association, January-February 1991, pages 72 - .

[6] See also Hans Hagemann, "From Microfilm to CD-ROM," page 245; K. Schlaepfer, "Optical Storage Disks for Archiving Documents," page 102.

[7] Information courtesy INFEUROPE, Luxembourg: this company has been commissioned by the Office for Official Publications of the European Community to make these publications of the EC accessible for a longer time by means of a FileNet-system on the basis of WORM storage media.

Durability of the media is, however, not the main problem in the evaluation of suitability for the required durable storage of information in archives or libraries.[8] They will always outlast the availability of the systems. As experience has shown, the innovation cycle is very short for any data processing equipment; hardware is surpassed a few months after its initial development and obsolete after five years. Thus, support of the system through the manufacturer or distributor can become a problem after a few years. "It is inherent in these machines that they become outmoded and die before having passed on their capacities to their progeny." This statement by Harald Heckmann points out the indubitably most important problem in the preservation of any kind of information which is no longer available to man without complicated technology.[9] Analogous information on a microfilm can be read comfortably with relatively minor expenditure (light source, optics), if necessary also by daylight with a magnifying glass, since it is "eye-legible."[10] Reading digitized information requires expensive technology with hardware and software components which are subject to rapid change. Who can still do anything with punched cards or punched tapes nowadays? Who still has a disk drive for 8" disks, which were almost the standard a few years ago? If opto-electronic media are to be used as durable storage units for information, all media have to be converted immediately as soon as a new generation of devices appears on the horizon. This is the only way to avoid the danger that these media become technically outdated and thereby incompatible.[11] The modern high tech systems become obsolete particularly fast. Microfilm, on the other hand, which has been known and proven for 150 years and has been declared dead again and again, does not even become obsolete and is always compatible with the most modern systems.

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[8] **The author has so far not been able to find any confirmation in library circles for the statement of Hans Hagemann, "From Microfilm to CD-ROM," page 244, according to which the "actual storage in a library sense comprises a time span of 400 years."**

[9] **Quoted according to Franz Georg Kaltwasser, "Restoration and Preservation as the Task of Libraries. The Conference on Preservation of Library Materials in the Austrian National Library, Vienna, April 7 through 10, 1986", in: Zeitschrift für Bibliothekswesen und Bibliographie (Journal for Library Science and Bibliography), 33 (1986), page 353.**

[10] **It is astonishing that in comparisons of microfilming systems and optical storage systems (WORM), reference is often made to the "weak mechanism" of microfilming systems but none to the rapid technological obsolescence of optical storage systems – see "New media in the TIB and their effect on the national supply of literature," a final report of a BMFT-project, Hannover 1990, pages 41- and 44. (BMFT refers to the Ministry for Research and Technology, "Bundesministerium für Forschung und Technologie.")**

An economic comparison also proves that microfilm is superior. Personnel requirements are much higher for opto-electronic storage systems during recording and indexing of documents than for microfilming. The collecting of search criteria and search addresses is essential for an orderly recording of documents in systems with optical storage disks, but it is unnecessary for sequential filming. Studies by the Association for Economic Administration reveal the following cost relationship so far: the cost of storing one page/year is DM 0.08 with microfilm, but DM 0.49 with an optical storage disk.[12] For archive material which cannot be filmed in a cost-effective production run, the cost relation changes somewhat in favor of optical storage disks, as shown by a pilot project of the National Archives in Washington.[13] According to this study, the personnel and equipment expenditures for a document imaging system using optical storage disks are two times higher than the costs for a computer aided/supported microfilm retrieval system with a nearly similar efficiency and three times higher than a traditional microfilm system without automatic retrieval facilities.

The optical storage disk can therefore be recommended only for applications in which frequent, timely access to a limited information base is essential, provided that the preservation of these data is solved in another way and there are no high demands for quality. It is an access medium, a medium for use. The optical storage disk is not a reliable storage medium for image recordings, since it does not have sufficient recording quality nor age resistance and since the future availability of compatible systems is very doubtful because of the lack of norms and standards. The optical storage disk cannot replace microfilm, an established, safe, age resistant and economical storage medium with high recording quality; it can, at most, supplement it in hybrid systems. In such systems the processing and distribution even of uncoded image information takes place digitally. The basis for this is microfilm as an age resistant, analogous storage component.

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[11] **See K. Schlaepfer, "Optical Storage Disks for Archiving Documents," page 104.**

[12] **AWV Informationen, volume 34, number 10, October 1988, page 6.**

[13] **National Archives and Records Administration (publishers), Optical Digital Image Storage Systems, Project Report, Washington 1991, pages 290 -.**

At any rate, filming for protection should first of all be done with a high-quality microfilm as an age resistant storage medium. This achieves protection and permits the use with means that are in keeping with the economy of the system. If additional means for use and more comfortable access are to be employed or if the images are to be made available in digitized form and interleaved with coded search information, it is quite possible to do this by means of systems with opto-electronic storage disks or similar devices - at some expense. The expense for the preceding filming for protection is by no means lost. Microfilming secures the investments. Nowadays, films can already to the basis for digitized image conversions for the purpose of use. They will be able to fulfill this purpose again and again in the future, when predictably still more efficient systems make access to the image recordings easier and easier and increase quality. Microfilms as analogous image storage media guarantee upward compatibility. The electronic access systems themselves cannot achieve this: a graphic master, once digitized with 200 dpi, can still only be looked at with the lesser resolution even in a subsequent system that gives a resolution of 600 dpi, unless the original is re-scanned with the higher resolution - and that is, of course, not the idea of preservation. The correct rule that each page of a book or other archive material should, if possible, only be handled once in connection with preservation measures should certainly not be broken for high tech systems because of their nature. A quality microfilm has a reproduction quality from the very start which will leave nothing to be desired even in the future. Thus, filming coupled with modern information access systems not only contributes to technical progress, but, more importantly, to the preservation of the originals through the scanning of microfilms, which is also more cost-effective.

prised to find that there was funding for preservation efforts. Geologists were almost uniformly realistic about the amount of funding likely to be available for preservation and that choices will have to be made.

. . . Even though we tried to focus discussion on the question of color preservation, the other problems of the geologic literature were apparent . . .. The problem of printing the oversize maps was clear. . . .

Microfiche

The color microfiche produced by Herrmann and Kraemer are a potentially successful preservation media for the geological literature. The color adequately represents the color coding present in the original maps. When a comparison between the original maps and the fiche was made, it was clear that there is a significant variation from the original colors. However this was not thought to be a problem . . . The resolution of the color and the black and white fiche was thought to be excellent . . .

Considerable time was invested in trying to find an appropriate viewer for the large frame fiche. . . . Trips were made to view microform readers for maps and newspapers that were supposed to accommodate full frame fiche, however none of these improved viewing enough to warrant recommendation. . . .

CD-ROM

The CD product was definitely a 'beta' product. . . . Simple black and white line drawings were quite clear. Photographs were difficult to identify without reference to the original (no grey scaling had been done, which explained the poor quality . . .). Color images were not scanned in color due to the high cost of quotes received. The black and white images of color maps were extremely difficult to read on the monitors. Color coding and considerable detail were lost. . . . The size of images posed a problem on the computer monitors we used. Single page images could not be seen on one monitor screen . . .

Print Products

The high quality of our text prints was unexpected. The poor quality of our screen images had been attributed to the monitor, the scanning level, and/or the fact that we were using publications with turn-of-the-century type faces. The evidence of the clear printed text suggests . . . that we were experiencing 'monitor lag' rather than having a problem with the scanning level or text.

> ***The evidence of the clear printed text suggests . . . that we were experiencing 'monitor lag'***

Color photographic and photocopy prints were made from the color microfiche. . . . Resolution on page size images was very good. Both the photographic and photocopy versions were acceptable . . . There was no question that the resolution and color fidelity on the photographic copies were superior. Oversize images continue to be a problem.

The Future

The Geoscience Information Society intends to continue its exploration of preservation priorities with the Geological Society of America. It is expected that a resolution for a joint GIS/GSA Preservation Task Force will be presented to the GSA Council in the spring and that a meeting will be held at the annual meeting next fall.

Possible areas of exploration for the future include closer examination of the uneven scanning detected by one of the viewing geologists and scanning some of the *NYSM Bulletin* images at 600dpi for comparison with the present project. . . ."

. . .

This pilot project demonstration was an outgrowth of the work of the Joint Task Force on Text and Image, supported by The Getty Grant Program. The end-user products were developed by the MicrogrAphic Preservation Service MAPS under contract to the Commission. See the October 1992 and November-December 1992 newsletters for additional information.

U.S.-Based Training Concludes for Deutsche Bücherei Staff

Three staff from the Deutsche Bücherei have completed their 11-week internship program in the management of preservation microfilming operations with the MicrogrAphic Preservation Service MAPS, Bethlehem, PA, and have returned to Leipzig to help establish and manage a new large-scale preservation microfilming unit. MAPS personnel conducted the training in processing, duplication, special film treatments, and quality assurance under contract to the Commission; continuing assistance will be provided to the trainees over the next three months. The training program was scheduled to coincide with the acquisition of the first preservation microfilming camera at the Deutsche Bücherei.

The contract was supported with funds from the Andrew W. Mellon Foundation. In Germany, it is estimated that 70 to 80 percent of collections are threatened and 12 to 16 percent are already brittle. In addition to microfilming projects, the German Research Council is financing work toward a national preservation strategy.

PRESERVATION READING

❑ *Advances in Preservation, Volume 1 - 1992*, by Barbra Buckner Higginbotham and Mary E. Jackson. Westport, CT: Meckler Publishing. Due to delays in publication, some chapters do not reflect current status. Several essays review past Commission initiatives, in particular those by Battin, Stevenson, Rütimann, Marcum, Sparks, and Kenney and Personius. The editor notes in the introduction: *As Patricia Battin says in her essay in this volume, "If the preservation challenge for the nineties could be characterized by one word, that word would be 'choice.' If one could suggest a second theme, perhaps it might be "change." Choice and change: for a field that anticipates much of both during the coming years, a new annual seems very appropriate.*

❑ *Mass Deacidification of Paper. A comparative study of existing processes*, by Astrid-Christiane Brandt (translated by Peter Thomas). Paris: Bibliothque Nationale. In his foreword, Jean-Marie Arnoult, Technical Director of the Bibliothèque Nationale, writes: *[This study] is intended to bring together information which is relevant — both from a scientific and library economics viewpoint — and material which is of essential importance for library and archive curators faced with the problems of paper degredation. The study also shows that the shortcomings and imperfections of existing techniques are such that further research is essential to develop more satisfactory processes, so that paper deacidification may finally become a standard procedure.* Available from Bibliothèque Nationale Technical Division, 58, Rue Richelieu 75084, Paris CEDEX 02 France.

Sonny Koerner New Communications Assistant

Sonny Koerner, a graduate of Bowie State University, has joined the Commission as the new Communications Assistant. A transfer student from the University of Alabama, Mr. Koerner was selected as a White House Intern after moving to the Washington area to complete his degree in Communication. While at the White House, he worked closely with the Points of Light Initiative, and aided in the initial meetings of the Commission on National and Community Service.

As the Communications Assistant, Mr. Koerner will be responsible for maintaining the Commission's newsletter subscriptions and mailing lists, as well as handling publication inventory and requests. In addition, he will promote and coordinate the lending of the Commission's two large exhibits (The Giant Brittle Book and the Modular Panel Exhibit), and the *Slow Fires* video. Sponsors of the Commission can contact Mr. Koerner for more information, or to request additional complimentary copies of publications and reports.

Inside: German View of Digital, Film Technologies

Included with this newsletter is the translation of an article on digital technology and microfilming for preservation and access written by Dr. Hartmut Weber, director and department head at the archives administration of the federal State of Baden-Württemberg. Dr. Weber supports the notion that "filming, coupled with modern information access systems, not only contributes to technical progress, but, more importantly to the preservation of the originals. . . ."

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 54

MARCH 1993

University of Iowa, University of Southern California, and Vassar College bring Sponsor Total to 57

The University of Iowa, The University of Southern California, and Vassar College have joined the ranks of Commission sponsors, bringing the list of supporting institutions to 57. Sponsors include 21 public and 27 private educational institutions, as well as eight public, state, and federal libraries; and one higher education coalition. Continued growth in support of the Commission has helped to increase national and international response to preservation and access. All sponsors receive expedited mailings of publications, newsletters, and other information. The Commission's two preservation and access exhibits are also available to sponsors at no charge.

Merged Preservation Database from Four Countries Distributed by CEC

At a January 1993 Peer Review Meeting called by the Commission of the European Communities (CEC), a test database of the European Register of Microform Masters (EROMM) containing successfully merged bibliographic records from England, France, Portugal, and Germany was presented to the partners. Among the products distributed at the Paris-based meeting were technical descriptions and a microfiche edition of the test database, as well as a magnetic tape containing about 10,000 test records. The merging of the bibliographic records originating in several European countries is a technical "first."

As reported in the July 1992 newsletter, the EROMM contract — co-funded by Directorate XIII of the CEC and the Commission on Preservation and Access — calls for making available in a common database bibliographic information about preservation microfilms. The pilot phase took records from the national libraries of the four countries named above and created a UNIMARC-based file, expected to be compatible with the minimum data requirements for an international register of microform masters being developed cooperatively by the several nations that attended a May 1990 Zurich meeting sponsored by the Commission on Preservation and Access.

At present, an extension of the contract is being sought to: 1) work out some remaining technical details before the full test database of some 50,000 records is created; 2) examine various options to create a firm administrative and financial base for Phase II and beyond; and 3) establish guidelines for the addition of other countries' records to EROMM.

Four Members Join Commission Board

At the Commission board meeting held February 5, 1993, four persons were welcomed as members.

Ambassador Nicholas A. Veliotes, has served as President of the Association of American Publishers since 1986, and has spent over 30 years in foreign service, posted to such countries as Italy, India, Laos and Israel. He also served in such positions as Deputy Director of the Policy Planning Staff, Special Assistant to the Deputy Secretary of State, Deputy Assistant Secretary and Assistant Secretary of State for Near Eastern and South Asian Affairs, as well as Ambassador to Jordan and Egypt. He received his BA and MA from the University of California at Berkeley.

Winston Tabb, Associate Librarian for Collections Services at the Library of Congress, directs a staff of 1,500 employees and is responsible for the library's acquisitions, processing of materials, and preservation as well as special research activities. Tabb has been with the Library of Congress since 1972, and has served there in many different positions. He represents the Librarian on the National Commission on Libraries and Information Science, the advisory committee to the White House Conference on Libraries and Information Services, and the Association of Research Libraries. He also serves as the library's liaison to the Research Libraries Group (RLG) Shared Resources Committee and as secretary to the International Federation of

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Members Join Commission Board

Continued from p. 1

Library Associations and Institutions (IFLA) Section on Interlending. He holds an MA in American Literature from Harvard University and an MLS from Simmons College.

Professor Klaus-Dieter Lehmann, General Director of Die Deutsche Bibliothek, is responsible for the design of new national bibliographic services, bibliographic utilities, questions of management, close cooperation with publishing companies and specialized information services. He currently serves on many German, European and international committees concerning library policy, including the UNESCO Intergovernmental Council of Federal Information Program, the German Commission for UNESCO, IFLA National Committee (Section on Information Technology), and the Commission of the European Communities. He holds an MS in Physics and Mathematics, and did his postgraduate work in library science in Frankfurt am Main. (Welcomed in absentia).

Betty G. Bengtson, Director of University Libraries at the University of Washington, served in a number of research library cataloging departments until she was named head of the cataloging department at Georgetown University Library in 1975. In 1982 she joined the University of Tennessee, Knoxville, as Associate Professor and Associate Director for Technical Services. In 1988 she served as Associate Director for Bibliographic Control and Access at the University of Washington until 1990 when she was appointed to her current position. She is currently active with a number of library and service committees and professional associations, and the author of many publications dealing with library science activities and services. She holds an MLS from Catholic University and a Masters of General Administration from the University of Maryland.

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The Commission on Preservation and Access was established in 1986 to foster and support collaboration among libraries and allied organizations in order to ensure the preservation of the published and documentary record in all formats and to provide enhanced access to scholarly information.

The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialists and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor.

. . .

The Commission board has accepted with regret the resignation of one of its original members, Kenneth R.R. Gros Louis, Vice President, Indiana University and Chancellor - Bloomington Campus. Gros Louis noted that although he remains a strong supporter of the Commission, his schedule as an academic officer has made it difficult for him to attend board meetings.

Govan Honored Upon Retirement

A rare 17th-century book of poems and a $1.1 million remainder trust marked the occasion in honor of Dr. James F. Govan's retirement after a 19-year tenure as university librarian at the University of North Carolina at Chapel Hill (UNC-CH). One of the Commission's original board members, Govan co-founded the Triangle Research Libraries Network in 1977 and garnered more that $5 million in private support for the library at UNC-CH. The university's Chancellor, Paul Hardin stated, "The library's collection has nearly doubled under Jim Govan's guidance. His dedication to the library, the very heart of the university, is a major reason we are able to celebrate this special milestone."

Preservation Symposium for Administrators to be Held in Southwest

A preservation symposium for administrators and legislators scheduled for April 29, 1993, is targeted to key decision makers and leaders who are instrumental in providing funding and support for preservation and conservation activities. A number of college and university provosts and presidents, state legislators and officials of libraries, archives, and government agencies in the Southwest have been invited to attend the symposium to be held at Southern Methodist University (SMU) in Dallas.

The event is co-sponsored by SMU, the Commission on Preservation and Access, AMIGOS Bibliographic Council, Inc., the Alliance for Higher Education, and the Graduate School of Library and Information Studies and Preservation/Conservation Studies at the University of Texas at Austin.

Commission Chairman Billy E. Frye is scheduled as the keynote speaker addressing the importance of preserving information resources. Accompanying Dr. Frye will be both Commission exhibits; coordinated with the help of AMIGOS, they will be displayed to help emphasize the importance of preservation and access, and exemplify the cooperative nature among the members involved in the organization and execution of the symposium. For more information contact Maureen Pastine, Director, Central University Libraries, SMU, at (214)768-2400.

After completing its tour at SMU, the modular exhibit is scheduled to appear at the Mid-Atlantic Regional Archives Conference (MARAC) in Long Branch, NJ, in early May 1993. MARAC obtained the exhibit through Commission sponsor Princeton University. For more information about borrowing either or both of the exhibits, contact Communications Assistant Sonny Koerner.

Pilot Survey to Help Develop Quality Assurance Criteria for Preservation Microfilm

A pilot survey of the technical quality of master negatives produced during the first years of the brittle books program of the National Endowment for the Humanities (NEH), Division of Preservation and Access, is being conducted under contract to the Commission by MSTC, Fairfax, VA. The survey is intended to help establish quality assurance criteria for preservation microfilm.

The technical success of the NEH brittle books program — a 20-year effort to reformat three million deteriorating items for preservation and access purposes — relies on the production of technically acceptable microfilms, distribution copies that are of adequate user quality, and storage of microfilms to minimize deterioration over time. The audit will address each of these requirements.

The preservation departments of the libraries at Ohio State, Yale, and Harvard Universities are contributing to the study by providing approximately 1% of the master and printing negatives they have filmed under the NEH brittle books program. Participating libraries are using the pilot project as an opportunity to assess some of their practices as well, including storage of master negatives and bibliographic control. MSTC, a independent firm that provides assessments of microfilm quality to government and corporate customers, was asked to develop an inspection procedure and methods for determining the quality of first- and third-generation microfilm. Data gathering and analysis will address image quality, with associated procedures and inspection for evidence of deterioration. An initial goal will be to establish bench marks for a continuing inspection/audit program.

A report to the Commission, which is expected to include budgetary cost information for continuing inspection/audit services and generalized initial findings, is due later this year.

Cornell Reports Progress with Access to Digital Library of Preserved Materials

In a series of interim reports to the Commission, Cornell University is relating progress in advancing the role of digital technologies for library preservation and access. During Phase II of the Joint Study in Digital Preservation supported in part by the Commission, Cornell intends to test access over the Internet to the Cornell Digital Library and to determine the feasibility of digital-to-microfilm conversion.

More specifically, the components of Phase II include:

- Provide browsing capability from any workstation to descriptive information about digital documents in the Cornell Digital Library, and facilitate requests for the delivery of printed copies.
- Develop an image delivery system that translates images stored in the Cornell Digital Library for transmission to a variety of systems.
- Deliver digital images to common workstations including Sun workstations, IBM PS2 computers, and Apple Macintoshes, and evaluate the quality of interface software and of the onscreen display.

Cornell's investigation is centering on determining whether digital files could be used to produce microfilm output that meets national technical specifications for preservation. These specifications cover a wide range of issues including the preparation of documents; composition of the film stock; quality of image capture as defined by reduction ratio, image placement, resolution and density; film processing; and storage.

The primary finding of a pilot demonstration of the conversion process, conducted with Image Graphics, Inc., Shelton, CT, is that microfilm meeting accepted national standards can be produced from 600 dpi scanned images for text printed at 4 point type and larger. Virtually all books published from 1800 to 1960 — which covers the period of paper's greatest brittleness — were printed in type sized ranging from 5 to 6 point and above. Cornell has concluded that 600 dpi scanning and the resulting film can serve as a viable means for capturing and preserving brittle books. Even though the technical feasibility has been demonstrated, some of the issues surrounding quality, processing, costs, and vendor services have yet to be resolved. An upcoming report during Phase II will address the promise of digital technology as a means for reformatting illustrated material.

During Phase I of the project, Cornell and Xerox Corporation captured the contents of nearly 1,000 brittle books as digital images as it developed the College Library Access and Storage System (CLASS) to meet preservation reformatting needs. CLASS was designed as a network compatible, distributed system intended to be as open as possible. (For background information, see ***Joint Study in Digital Preservation. Phase I*** (September 1992, 47 pages) available from the Commission for $10.00, prepayment required). A final report from Phase II is expected later this year.

ANSI Announces Revision to Standards

The American National Standards Institute (ANSI) adopted a revision of the ANSI standard for permanent paper on October 26, 1992. This 1992 standard applies to papers used in unpublished documents as well as those in printed books, and increases the base of the previous edition by including provisions for both coated and uncoated paper. The revision effort involved a number of specially commissioned paper tests that were conducted by the American Institute of Paper Science and Technology. A grant from the Mellon Foundation helped to support the testing program which was also part of a broader effort to promote the use of

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ANSI Announces Revision

Continued from p. 3

permanent paper in biomedical literature.

The revised standard is officially entitled the American National Standard for Permanence of Paper for Publications and Documents in Libraries and Archives (ANSI/NISO Z39.48-1992), and is scheduled for publication this month. For copies, contact Transaction Publishers, Rutgers University, New Brunswick, NJ 08903.

1993 Update on NEH Brittle Books Program

The Commission now has available a 1993 updated version of the progress on the 20-year brittle books program managed by the National Endowment for the Humanities. The simple, two-page graphic uses a series of pie-charts to illustrate the progress of the program, which currently involves 65 participating institutions that are filming, or have filmed, approximately 530,000 volumes.

New Order Form Available

A revised version of the Commission's publication order form is now available. The updated form includes order numbers that coordinate with stock and supply numbers. This process will help expedite order turnaround and efficiency. Those ordering or requesting publications are encouraged to include these numbers with all queries. A copy of the new form can be faxed or mailed upon request to Communications Assistant Sonny Koerner.

Photos and Graphics Needed for Mass Media Use

Over the last few years, the Commission has responded to a number of requests from the mass media for photos and graphics dealing with preservation and access. Organizations such as the Cable News Network (CNN) and Canadian Broadcasting Corporation (CBC), as well as print publishers from around the world, are among those who have contacted the Commission for information and visual materials. Those able to donate or lend materials illustrating preservation and access activities and issues are asked to contact Communications Assistant Sonny Koerner.

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 55

APRIL 1993

Project IBID Completes Planning Phase

A nine-month preliminary planning stage for Project IBID has concluded with nearly all goals accomplished. The project was developed by the College Libraries Committee to investigate the viability of a system for reprinting and supplying, on-demand, new copies of copyrighted, out-of-print books for libraries and other buyers (see January 1993 newsletter). Project coordinators David Cohen and Willis Bridegam, College Libraries Committee members, have reported to the Commission the completion of the following actions:

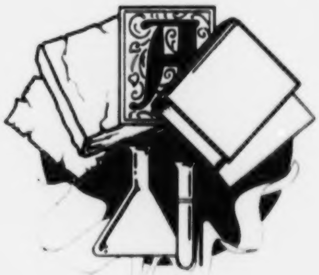
- Development of a business and marketing study: This plan was prepared by SOLINET's Preservation Microfilm Manager.
- Exploration of the technical capabilities of groups interested in working with the project: There was agreement by Cornell University to serve as the production center.
- Discussions with major publishers regarding reprinting their out-of-print publications: Publishers suggested a need to explore the issue of on-demand publishing and to demonstrate that it could be done for a reasonable price, and offered their support in cooperating with IBID if it is funded as a research and demonstration project.
- Presentation on the Project IBID system at several librarians' meetings: A considerable number of individual libraries and library organizations provided support and guidance.
- Development of a licensing agreement: It became clear that licensing agreements would need to be negotiated individually. However, some progress was made on what these agreements should contain.
- The identification of possible sources of funding for the demonstration phase: An application for a two-year demonstration project was submitted to Title II, U.S. Department of Education.

The grant application submitted in January 1993 included letters of support from eight university presses and fourteen college head librarians. If the two-year demonstration project is funded and conducted, it is expected that publishers and librarians will have considerable information at hand concerning the economic, distribution, and technology issues involved in reprinting out-of-print books from a digitized database. Publishers and service agencies will be able to gauge extent of the market for out-of-print books and determine a financial break-even point for scanning and printing copies for resale.

Boorstin, Cline Scheduled to Testify for NEH

Daniel J. Boorstin, former Librarian of Congress, and Nancy Cline, Dean of University Libraries at Pennsylvania State University, have accepted an invitation from The National Humanities Alliance, the Association of Research Libraries, and the Commission to testify before Congress on behalf of appropriations for the National Endowment for the Humanities. The hearings are before the Subcommittee on the Interior and Related Agencies, in the U.S. House of Representatives, scheduled for May 5, 1993.

Scientist-Administrator Teams Move Ahead with Research Agenda



After a year of considerable progress by a group of preservation administrators from key universities and research libraries in the United States and Canada, the Commission has decided to continue support of a science research initiative and host a second invitational workshop in September, 1993.

The initiative involves preservation administrators from 16 institutions and four scientists who are developing productive teams with the necessary

Continued on p. 2

Scientist-Administrator

Continued from p. 1

scope, knowledge and ability to forge a collaborative scientific research agenda to meet preservation decision-making needs at the institutional level.

The second invitational workshop will be held September 15-17, 1993, at Belmont Conference Center, Elkridge, MD. Building on the first workshop in September 1992 and an interim one-day planning meeting in February 1993, the scientists and preservation administrators will further develop the four or five key research efforts determined to be of most value to preservation of collections at this time. Preliminary planning has surfaced the need for basic and applied research within broad areas initially defined as: the long-term stability of specific materials (paper and non-paper) in collections; the impact of environmental factors on collections of specific materials; and the impact of specific treatments and processes on collections. The teams also surfaced the need for development of implementation and management tools based on applied scientific findings.

The Commission expects that these collaborative efforts will stimulate the necessary broad-based support to carry forward with a coordinated and useful scientific research agenda.

Participants: **Preservation administrators** Wes Boomgaarden, Ohio State University; Connie Brooks, Stanford University; Sherry Byrne, University of Chicago; Margaret Byrnes, National Library of Medicine; Paul Conway, Yale University; Ellen Cunningham-Kruppa, University of Texas at Austin; Richard Frieder, Northwestern University; Janet Gertz, Columbia University; Kenneth Harris, Library of Congress; Jan Merrill-Oldham, University of Connecticut; Carla Montori, University of Michigan; Carolyn Clark Morrow, Harvard University; Barclay Ogden, University of California, Berkeley; James Stroud, Harry Ransom Humanities Research Center; Karen Turko, University of Toronto; Chris Ward, New York State Archives. **Scientists** James R. Druzik, The Getty Conservation Institute; James M. Reilly, Image Permanence Institute; Donald K. Sebera, Library of Congress; Peter Sparks, Consultant.

States Move Ahead with Cooperative Preservation

Maryland, Kansas Conducting Projects

Maryland's libraries and archives are the focus of a major project to coordinate preservation planning for the state's printed and documentary resources. The Statewide Preservation Planning Project is sponsored by the Task Forces to Initiate Preservation Planning in Maryland, a group formed in response to recommendations by the 1990 Governor's Conference on Libraries and Information Services. The Task Force received a grant from the National Endowment for the Humanities (NEH), Division of Preservation and Access which is supporting regional meetings of library professionals, business, community and government leaders; a statewide preservation assessment survey; and a published action plan. The project will be completed in January 1994.

The Kansas Library Network Board also has been awarded an NEH grant to coordinate a statewide preservation plan to focus on preservation of the library and archival resources documenting the state's history that are found in 315 public libraries, 26 universities, 75 special libraries, 1,000 school libraries and hundreds of local museums, genealogical and historical societies.

NYS Focuses on Architectural Records

Statewide priorities for handling the preservation and access needs of architectural records collections and the creation of a resource group for assistance in the care and management of these collections are expected outcomes of a six-month project, "New York State Architectural Records Needs Assessment Project: a Blueprint for Action." The planning project is being funded by the New York State Program for the Conservation and Preservation of Library Research Materials and sponsored by Syracuse University. Other participants include Columbia, Cornell, the State University of New York (SUNY) at Albany, SUNY at Buffalo, the University of Rochester, and the New York Public Library.

The project includes a seminar, a needs assessment survey, development of individual institutional preservation plans, and identification of group priorities in preparation for a subsequent cooperative proposal to support implementation.

Further information is available from the project director, Martha Hanson, Preservation Administrator, Syracuse University, E.S. Bird Library, Syracuse, NY 13244-2010.

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The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialists and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor.

New Training in Preservation Strategies

Preservation Training for Directors in Southwest

This spring, the AMIGOS Preservation Service (APS) is offering the first in a series of training courses in preservation, designed to reach all levels of library and archives staff. The half-day course entitled "Preservation Issues for Directors" will provide top administrators with information on budgeting, funding sources, organizational positioning, and management planning for preservation. The course is applicable to all types and sizes of cultural institutions.

Because the AMIGOS Preservation Service is funded in part by the National Endowment for the Humanities, the course is being offered for a low registration fee. APS was established in 1991, with the mission of documenting the preservation needs of libraries and archives in the Southwest and to help in planning preservation programs to meet those needs. Further information is available from Tom Clareson, AMIGOS Preservation Service Manager at (800) 843-8482.

Hands-on Workshops at Johns Hopkins University

The Milton S. Eisenhower Library at Johns Hopkins University, with funding from the National Endowment for the Humanities (NEH), will offer ten hands-on workshops each year in basic and advanced preservation techniques over the next three years.

The workshops will offer training opportunities to staff employed in mid-sized and smaller libraries, archives, and historical and genealogical societies that have established a commitment to preserving their collections. Focus of the workshops will include such topics as book repair, disaster recovery and exhibit preparation. For more information contact the Administrative Officer, Milton S. Eisenhower Library, The Johns Hopkins University, Baltimore, MD 21218; or call (410) 516-8326.

Mid-West Institute on Preservation Strategies for Collection Management

A regional institute, "Preservation Strategies for Collection Management," sponsored by the Association for Library Collections and Technical Services (ALCTS), a division of the American Library Association (ALA), is scheduled to be held May 3-4, 1993, at the Conference Center at the University of Notre Dame. The institute is geared to librarians from institutions with little or no formal preservation program, and will equip those involved in collection management with the needed skills to set preservation priorities, work with available resources and establish plans that are appropriated to the collection(s) at risk within their institutions. For more information contact Yvonne McLean, ALCTS, at (800) 545-2433.

Mellon Foundation Study on University Libraries

The Andrew W. Mellon foundation recently released a report entitled "University Libraries and Scholarly Communication," published by the Association of Research Libraries (ARL), that discusses the transformation of university libraries in recent years in areas from budget reductions to electronic access to information.

According to an article in *The Chronicle of Higher Education* (February 17, 1993), the report suggests that libraries have begun a period of what promises to be "tumultuous change, as the computer revolution redefines scholarly publishing and helps to transform the library from a warehouse of printed materials to a gateway for gaining electronic access to information." The report also indicates a contradiction in the assumption that most libraries have received increased financial support since the 1960's when university and college budgets started steady growth. Instead, financial support has decreased, leaving libraries "struggling to computerize their operations and pay sky-rocketing prices for journals and other materials."

> ***Libraries have begun a period of what promises to be "tumultuous change, as the computer revolution redefines scholarly publishing and helps to transform the library from a warehouse of printed materials to a gateway for gaining electronic access to information."***

The report argues that recent changes have resulted in " less access to scholarly information, since library budgets cannot keep up with increases in the cost and volume of materials," and implies that pressures on acquisition budgets will eventually make some research libraries seem more alike, "as each ceases to purchase as many of the more esoteric publications and chooses rather to be sure that essential volumes are acquired." For further information contact the ARL at (202) 296-2296.

Harvard Releases Report on Deacidification

Harvard University has released a 17-page report on the first year of its pilot program on mass deacidification. Some seven Harvard libraries/collections participated in the program during 1990-1991, and an estimated $65,000 was spent to deacidify materials from each of the libraries or collections involved with the program.

The report states that in the second year of the pilot program, additional libraries and collections have joined in the effort. The Preservation Service Department at Harvard's Widener Library has been sending regular shipments of books designated for repair or rebinding through the deacidification process. Widener's Binding Librarian has assumed responsibility for coordination of the operational aspects of the mass deacidification program in conjunction with the Harvard University Library Preservation Office. For more information about the report, please contact the Preservation Office at (617) 495-8596.

Haverford College Microfilming Quaker Periodicals

Haverford College, Haverford, PA, is microfilming 103 titles in its Quaker Periodicals Collection, funded by a $64,281 grant from the National Endowment for the Humanities, Division of Preservation and Access. The periodicals are heavily used by scholars and researchers; seven books researched in the Quaker Periodicals Collection have been published in the last five years. The periodicals cover Quakers' participation in "the world's business," giving the Quaker view on topics such as the American Civil War, women's social and political history, abolitionism, and westward exploration.

Order Form Available

A copy of the revised version of the Commission's publication order form is included with this newsletter. Please note that the updated form includes order numbers coordinated with stock and supply numbers. This process will help expedite order turnaround and efficiency. Those ordering or requesting publications are encouraged to include these numbers with all queries. For more information write to the attention of Sonny Koerner at the Commission, or call (202) 939-3400.

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MARCH 1993

The Commission on Preservation & Access

Order Form

NEW LISTINGS

Quantity	Report	Price
___	34). Rütimann, Hans. *The International Project, 1992 Update* (1/93)	*$10.00
___	32). Willis, Don. *A Hybrid Systems Approach to Preservation of Printed Materials* (11/92, 72 pp.)	*$10.00
___	31). *Annual Report July 1, 1991 - June 30, 1992* (10/92, 55 pp.)	free
___	29). Kesse, Erich. *Survey of Micropublishers* (10/92, 6 pp.)	*$5.00
___	28). Lesk, Michael. *Preservation of New Technology. A Report of the Technology Assessment Advisory Committee* (10/92, 19 pp.)	*$5.00
___	27). Waters, Don and Shari Weaver. *The Organizational Phase of Project Open Book* (9/92, 11 pp.)	*$5.00
___	26). Kenney, Anne and Lynne Personius. *Joint Study in Digital Preservation. Phase I* (9/92, 47 pp.)	*$10.00
___	25). Waters, Don. *Electronic Technologies and Preservation* (6/92, 8 pp.)	*$5.00
___	24). *Preserving the Illustrated Text. Report of the Joint Task force on Text and Image* (4/92, 31 pp.)	*$10.00
___	23). Rütimann, Hans and Stuart Lynn. *Computerization Project of the Archivo General de Indias, Seville, Spain* (3/92, 20 pp.)	*$5.00
___	22). Rütimann, Hans. *Preservation and Access in China: Possibilities for Cooperation* (3/92, 16 pp.)	*$5.00
___	21). Klein, Christine De Bow. *Jewelry History: A Core Bibliography in Support of Preservation* (2/92, 52 pp.)	*$12.00
___	20). *Review and Assessment Committee Final Report* (9/91, 44 pp.)	free
___	19). *Annual Report, July 1, 1990 - June 30, 1991* (9/91, 53 pp.)	free

OVER

__	18). Univ. of Pennsylvania Libraries. ***Report on the Preservation Planning Project*** ((9/91, 44 pp.)	free
__	16). Stevenson, Condict G. ***Working Together. Case Studies in Cooperative Preservation*** (9/91, 35 pp.)	*$5.00
__	15). Miller, Hillis. ***Preserving the Literary Heritage. The Final Report of the Scholarly Advisory Committee on Modern Language and Literature*** (7/91, 8 pp.)	free
__	14). Waters, Don. ***From Microfilm to Digital Imagery. Report of the Yale Univ. Library*** (6/91, 41 pp.)	*$5.00
__	13). Hazen, Dan. ***The Production and Bibliographic Control of Latin American Preservation Microforms in the United States*** (6/91, 48 pp.)	*$5.00
__	12). ***National Conference on the Development of Statewide Preservation Programs - Report, March 1-3, 1989*** (1991, 107 pp.)	*$15.00
__	11). Oakley, Robert. ***Copyright and Preservation: A Serious Problem in Need of a Thoughtful Solution*** (9/90, 58 pp.)	*$15.00
__	10). Lynn, Stuart. ***Preservation and Access Technology. A Structured Glossary of Technical Terms*** (8/90, 68 pp.)	*$5.00
__	09). Marcum, Deanna. ***Preservation Education Institute Final Report*** (8/90, 14 pp.)	free
__	08). Sparks, Peter. ***Technical Considerations in Choosing Mass Deacidification Processes*** (5/90, 22 pp.)	*$5.00
__	07). ***Scholarly Resources in Art History: Issues in Preservation. Seminar Report, Sept. 29 - Oct. 1, 1988*** (1989, 43 pp.)	*$5.00
__	04). ***Newsletters***: Selected Issues	free
__	03). ***Commission Brochure*** on Preservation and Access Initiatives	free
__	02). ***Slow Fires*** brochure on preservation video/film	free
__	01). ***Brittle Books*** - A basic blueprint for the beginning of the Commission Preservation and Access.	free
__	33). Information on Commission's ***Modular and Giant Brittle Book Exhibits.***	free

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ISSN 1043-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 56

MAY 1993

From the Commission Board...

Preservation and the Library of the Future

Every so often, this newsletter will include some comments from Commission Board members. In this first column, Chairman Billy E. Frye, Provost of Emory University, envisions a strong relationship between the nationwide preservation program and the evolution of the library of the future.

These days just about everybody with any interest in libraries is writing or talking about the library of the future, or so it seems. The dream we all share is that through the power of computer and telecommunications technologies the libraries of the nation and the world will be linked with one another so that consumers may have access to any information located anywhere in any format quickly at reasonable cost. Inflation and the decay of brittle paper are eroding the capacity of our independent libraries to provide access to information, while the added costs of new technologies and the explosive increase in published information are overwhelming them. One can only hope that the electronic "virtual library" becomes a reality sooner rather than later. It is no longer a question of whether this dream will become a reality, but how quickly and how cost effectively it will happen.

The idea is not a new one, of course. I'm told that digitization of word, sound and image has reached the point where design of the virtual library is in large part technically feasible today. The

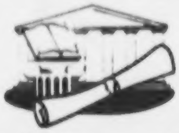
Continued on p. 2

> ***"Libraries will remain societies dedicated to the preservation of an ancient technology with the new. As for the signs and symbols reflecting the memory of a civilization and the preservation and dissemination of knowledge, the virtual book and the virtual library will only enhance these fundamental tasks."***
>
> -"The Futurecast," quoted from the Library Journal, March 15, 1993.

Culpeper Grant to Support Education, College Library, Communications Initiatives

The Charles E. Culpeper Foundation has announced a grant of $175,000 over a two-year period to the Commission to support the College Libraries Committee, a series of seminars for library school deans, and the communications and publications program. The grant will facilitate a number of interrelated initiatives.

The funding will enable the College Libraries Committee to continue its biannual meetings for two years and to conduct business between meetings. Its agenda will include exploring the potential for college libraries in the developing areas of digital preservation technology. The grant also will support the conduct of two 2½-day seminars for library school deans to stimulate new and creative thinking in reconceptualizing preservation education for librarians for the 21st century. Finally, the award will help support the broad-based advocacy of the Commission's communications program, including the production and distribution of this newsletter and other reports.



The Charles E. Culpeper Foundation is a private, non-profit, charitable foundation established under the will of the late Charles E. Culpeper, one of the early pioneers in the bottling and marketing of Coca-Cola. In recent years, the Foundation has disbursed approximately $6 million a year to activities in health, education, arts and culture, and the administration of justice.

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From the Commission Board

Continued from p. 1

principal problems lie in such areas as economics, regulatory policy (copyright), ownership and authority, institutional organization and cooperation.

As these problems are solved and agreements about goals, costs, responsibility, and authority are reached among a consortium of institutions with a commitment to the idea, the virtual library will rapidly begin to fall in place. Along with the institutional and economic issues, other limiting factors are the relative shortage of digitized books and journals, especially in the humanities in the near term, and, of major consequence, the fragility of the electronic formats, which must be managed in ways yet to be determined.

My point in commenting on this familiar scene is to suggest that there is potentially a very significant relationship between the nationwide preservation program, as it is evolving under the National Endowment for the Humanities, and the evolution of the virtual library. The preservation program is having to solve many of the same kinds of problems that will be encountered in making the virtual library a reality, including:

- the development of uniform guidelines and protocols for creating and cataloging material in film and electronic formats;
- agreement, *in effect*, to move from strict local autonomy to a significant degree of shared ownership or authority over these materials;
- development of local, regional or national repositories with the capacity to store, retrieve, replicate and distribute any item at reasonable cost;
- and, critically important, procurement of funding that gives individual institutions the capacity and incentive to participate in a cooperative program without undue adverse consequences to the local institution.

There are, of course, major barriers in the preservation program that also loom large in the prospect of the virtual library. These include developing appropriate economic and commercial structures and copyright law and overcoming cultural resistance to any change that threatens the traditional concept of the library. These and other residual problems notwithstanding, it seems to me that the preservation program is making important contributions to the evolution of the virtual library in two ways: first, it is giving us experience in working out some of these difficult organizational, policy and behavioral problems. It has already given us invaluable experience in going beyond talk of cooperation to actual cooperation with major shared benefits for all over the long run. Second, the preservation program — in progressively generating a major collection of microfilm masters — is addressing many of the management issues and questions about costs of reformatting that we will confront in the networked electronic library of the future.

This is undoubtedly a simplistic characterization of a problem that in its details is complex. However, it can be done. When it happens, the virtual library will be many steps closer to reality, and the significance of the various efforts in which so many of our institutions are involved will be amplified far beyond their original intent. It is my hope that beyond its intrinsic goal of preservation, the National Endowment's preservation program will provide a major impetus toward shared collection development and management and access based on digital technology — the virtual library of the not too distant future.

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Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor

> ***". . . the codification of knowledge and the process of enhancing human learning will be the cornerstones of the next phase of human history. In the second industrial revolution, the wealth and power of nations will be based on nonmaterial resources, by the ability to create and facilitate knowledge. Seen in this light, the librarian is a natural leader for the age of knowledge that is now unfolding."***
>
> "The Futurecast," quoted from the Library Journal, March 15, 1993.

German Task Group Releases Report on Paper Deterioration

A Federal-State Task Group, appointed by the Deutsches Bibliotheksinstitut has released a report based on the group's study of paper deterioration. The group studied the causes, the extent of the problem, and effects and consequences of paper deterioration in libraries and archives, as well as in the administrative sector. The report (***Federal-State Task Group Paper Deterioration Report***) culminates with a section devoted to recommendations based on results of the study. For more information, write to the Deutsches Bibliotheksinstitut, Bundesallee 184/185, 1000 Berlin 31, Germany.

Plans Advance for Management Training, New Technologies

At a March 12 meeting at Commission headquarters, the College Libraries Committee selected 22 applicants, including a recipient of a scholarship funded by the Commission, to participate in the second Preservation Management for College Libraries Seminar. The committee also committed itself to fostering the future of the seminar by serving as advisors and advocating that it be offered in other locations throughout the U.S. The seminar was cooperatively developed by the committee and the Southeastern Library Network, Inc. (SOLINET), and first conducted by SOLINET in the summer of 1991.

Since the seminar is in the public domain, the committee agreed that other interested organizations should be encouraged to sponsor the seminar, continuing its focus on the management concerns associated with part-time preservation administrators in college libraries.

Committee members also reviewed Project IBID's proposal to the U.S. Office of Education Title IIC for partial support of a two-year demonstration to determine the feasibility of keeping needed out-of-print books available to college libraries and others by scanning them, storing them in digital format, and using high-speed equipment to print copies on demand. Since the proposal calls for the first scanning of 250 titles to begin in early 1994, the committee decided to begin title selections while the grant is being reviewed. It also requested that the Preservation Managers Council, which is cooperating in the project, begin its selection at this time. The proposal will be acted upon in October 1993. Project IBID has been supported with funds and in-kind contributed costs from Amherst College, the College of Charleston, SOLINET, and the Commission.

The committee accepted with regret the resignation of one of its founding members, Joel Clemmer, Library Director, Macalester College. The committee, which was convened in February 1989, is composed of library directors from institutions representative of the nation's liberal arts colleges.

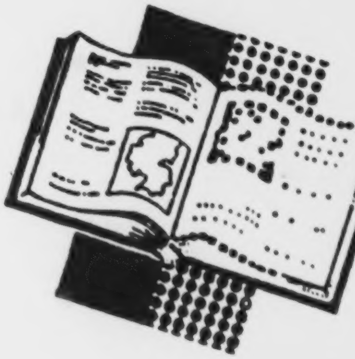
Current members are **Willis E. Bridegam**, Librarian, Amherst College; **Barbara J. Brown**, University Librarian, Washington & Lee University; **David Cohen**, Director of Libraries, College of Charleston; **Caroline M. Coughlin**, Library Director, Drew University; **Michael Haeuser**, Head Librarian, Gustavus Adolphus College; and **Kathleen M. Spencer** (chair), Library Director, Franklin & Marshall College.

Digital Projects, Support for Preservation Emerge as Priorities

At its second meeting on March 19, the Preservation Managers Council identified the research and development projects of the digital preservation consortium as a primary Commission priority. The council, which represents managers of large institutional preservation programs, also identified heightened advocacy for broad-based support of preservation and access as another top priority.

The seven-member council saw a need for individual institutions to become more active in involving and informing scholars in preservation and access explorations. They also proposed that institutions become more vigorous in garnering funds for preservation and access projects. It was agreed that a major role for the Commission is assistance as an advocate, educator, and fundraiser among constituencies outside the institutional setting. A film sequel to *Slow Fires* that examines preservation and access questions raised by new technologies, now under consideration by the Commission board, would be a major contribution to this effort.

The group also agreed on the importance of continued institutional support for the National Endowment for the Humanities (NEH) brittle books microfilming program.



The group also agreed on the importance of continued institutional support for the National Endowment for the Humanities (NEH) brittle books microfilming program. The administrators discussed how to enhance the availability of the 500,000 preservation microfilms produced under this program so far, and also explored the emerging and future responsibilities of preservation administrators in a changing environment.

The council was convened last year to provide a forum for the contributions of managers of large preservation programs to the Commission's activities. The group is planning to become a communication link to scores of preservation administrators throughout the U.S. and Canada. Meetings are held in the spring and fall.

Council members are: **Margaret Byrnes**, Head, Preservation Section, National Library of Medicine; **Ellen Cunningham-Kruppa**, Preservation Officer, University of Texas, Austin; **Richard Frieder**, Head, Preservation Department, Northwestern University; **Kenneth Harris**, Director for Preservation, Library of Congress; **Carolyn Clark Morrow**, Malloy-Rabinowitz Preservation Librarian, Harvard University; **Barclay Ogden**, Head, Conservation Department, University of California, Berkeley; and **Christine Ward**, Chief, Bureau of Archival Services, New York State Archives and Records Administration.

ARL Publishes Preservation Resource Guide

The Association of Research Libraries (ARL) has published seven Preservation Planning Program resource guides, supported by a grant from the National Endowment for the Humanities. The guides offer libraries comprehensive, easy-to-use information relating to the major components of a preservation program. Titles are: *Options for Replacing and Reformatting Deteriorated Materials; Collections Conservation; Commercial Library Binding; Collections Maintenance and Improvement Programs; Disaster Preparedness; Staff Training and User Awareness in Preservation Management; and Organizing Preservation Activities.* The guides are designed to provide normative information against which a library can measure its preservation efforts and enhance existing preservation activities or develop new ones. They are available, prepaid, for $15 each ($70 per set of 7). Orders and payment should be sent to The Association of Research Libraries (ARL), Publications Dept., Dept. #0692, Washington, DC 20073-0692. For additional information contact Gloria Haws, (202) 296-8656.

Provided as an insert to this newsletter is the eight-page report, *The Preservation of Archival Materials*, from the Task Forces on Archival Selection. The Commission supported the work of the task forces to identify and consider key issues related to the preservation of archival materials. Further support was provided by The Research Fellowship Program for Study of Modern Archives at the Bentley Historical Library, University of Michigan. Additional copies of the report are available for $5.00 from the Commission while supplies last.

A decision model for assigning preservation priorities developed by the task forces is being field tested by the Research Libraries Group (RLG), Inc., Mountain View, CA. After completion of the field test, the results will be made widely available by RLG.

Goldsmith Honored by NYU

New York University (NYU) has honored author Barbara Goldsmith for her ongoing lectures at the university and for establishing the Goldsmith Preservation Laboratory at NYU's Elmer Bobst Library. She received the NYU Presidential Citation presented by university president, L. Jay Oliva. Goldsmith, a Commission board member, is a long-time advocate of book preservation and acid-free paper.

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THE PRESERVATION OF ARCHIVAL MATERIALS

A REPORT OF THE TASK FORCES ON ARCHIVAL SELECTION TO THE COMMISSION ON PRESERVATION AND ACCESS

April 1993

Task Force Preface

The Task Forces on Archival Selection are pleased to present this report to the Commission on Preservation and Access. The Commission supported the work of the task forces to identify and consider key issues related to the preservation of archival materials. Further support was provided by The Research Fellowship Program for Study of Modern Archives at the Bentley Historical Library, University of Michigan, which funded a four and a half day meeting to review and expand upon the work.

The final report represents the views of a broad spectrum of archivists. It is not, however, intended to be a final statement on any of the issues covered. Rather, it is hoped that it will stimulate both general discussion of the issues raised and application of the recommendations. A decision model for assigning preservation priorities developed by the task forces is being field tested by the Research Libraries Group (RLG), Inc., Mountain View, CA. After completion of the field test, the results will be made widely available by RLG.

Although a sustained and comprehensive effort has been underway in the United States for the past decade to preserve published materials of importance to scholarly research, a similar campaign has not yet been launched to ensure that a significant portion of the archival record will also be accessible for use in the future. The Scholarly Advisory Committee on History convened by the Commission on Preservation and Access has been particularly concerned about the survival of such materials. At its second meeting in April 1991, the committee agreed that greater attention should be paid to developing methods of selection for preservation, with particular attention to the kinds of collections held by archives. As Larry Hackman, Archivist of the State of New York, stated in a working draft prepared for the committee in May 1991:

> *In contrast to published information, no similar initiatives have been taken to select and preserve systematically even the most important unique archives and manuscripts nationwide. . . . A review of Federal preservation grants, for example, suggests the absence of priority or pattern and offers little assurance that the most important collections are being preserved. Decisions appear to be made without any formal or commonly accepted framework for assessing their intrinsic value, the importance of the information they contain relative to information in other records or collections, and their physical condition and the costs of preservation.*

In other words, a systematic methodology for developing preservation priorities for archival materials at institutional, inter-institutional and national levels is needed.

In accepting their charges, the task forces recognized the broad and diffuse nature of their undertaking.[1] Archival preservation encompasses not only individual repository actions but cooperative efforts as well. To work in this larger arena, a variety of participants will need to assume responsibility for program development on multiple levels. Such an approach requires a common conceptual framework. To help develop that framework, this report presents a statement of basic principles that provide a focus for action and a set of recommendations.

Although the report does not deal directly with electronic and hybrid systems, it does examine the archival management of paper-based systems with an eye to developing a methodology to encompass newer technologies and media as we move into the 21st century. To that end, preservation elements are outlined within a framework of responsible collecting and custody that begins even before the materials are acquired by the repository. Repositories are encouraged to adopt a broadened view of preservation management as maintaining the usability of their collections as a whole for as long as possible.

Such an expanded concept of preservation moves beyond a focus on materials that reside in individual repositories, beyond the limits traditionally imposed by the physical format or medium within which the information resides, and beyond a reliance on microfilming or conservation treatment as the only solutions. It also assumes that not all of the holdings of any one archive can be expected to survive forever either as artifacts or as information reincarnated in a new format.

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April 1993

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The report is addressed to several audiences: archivists; preservation professionals; those responsible for the administration and support of archives, including their physical facilities; professional organizations; users of archives; networks and consortia; and governmental and private funding agencies and other resource allocators.

Finally, the report is intended to be provocative in the hope that it will stimulate debate and a reexamination of accepted views. In short, the report should be viewed as the beginning of a process to make preservation a more integral part of archival practice.

CONCEPTUAL ISSUES

The Range of Media Covered

At the outset, both task forces focused primarily on the preservation of retrospective, paper-based collections. In the course of their work it became clear that portions of the discussions would be applicable to collections of photographs, moving images, and, to a lesser extent, video and sound recordings on magnetic tape.

The decision model is less appropriate to electronic records, since it was written primarily in terms of the physical characteristics of paper and secondarily of film. Archival records on magnetic media, as well as video and audio tape, certainly require special environmental controls and housings due to their physical instability. However, the continual obsolescence of commercial tape formats and playback machinery is equally an impediment to long-term preservation with these media. In addition, selection decisions for the preservation of electronic records, including when, where, and how to maintain the preserved information, are best made before the records are created. Indeed, because of the rapid proliferation of new technologies for the capture and retrieval of information, the permanent retention of information residing in these inherently unstable formats will require

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[1] See Background, last page.

If preservation is understood to comprise a series of actions to prolong the life expectancy of archival materials, as outlined above, it is necessary to rethink the concept of ***enduring value***. The premise that all materials accessioned by a repository are of enduring value is fundamental to archival practice. There is, however, an inherent contradiction between the concept of enduring value as a description of intellectual content and the concept of life expectancy, which recognizes the limitations imposed by the physical medium.

Given the technical complexity and cost of conservation and the financial and organizational barriers to reformatting, only a fraction of the holdings of any given archive can be expected to receive either kind of treatment. Therefore, while repositories will continue to impose the standard of enduring value upon their acquisitions, such judgments need to be tempered by a recognition of the realities imposed by the lfe expectancies of various physical formats. This report is intended to help define and clarify these distinctions.

BASIC PRINCIPLES

The following principles were developed to provide a focus for action and identify the basis upon which a national consensus for preservation strategy can be structured. The principles assert the interdependence of preservation and all other aspects of archival management. Preservation cannot be considered in isolation and cannot be removed from custodial responsibility without risk. At issue is both the viability of the current record and the quality of documentation for American society.

A Responsible Archival Management Program

Preservation is an integral component of overall archival management and must be blended into an archive's mission, policies, and programs. A responsible archival management program is founded on a realistic and clearly stated concept of institutional mission and bases its decisions on a well-defined acquisition policy. Such a program accepts responsibility for active management of the preservation of its collections, including using clearly defined criteria to set priorities among its collections.

The Fundamental Importance of Environment, Housing and Ongoing Maintenance

Appropriate environmental and housing conditions and a program of ongoing maintenance, i.e., responsible custody, are the most important and critical measures that can be taken to prolong the life of archival collections. The life expectancy of archival material is directly affected by the conditions under which it is produced, stored, used and maintained. The most cost-effective long-term application of an institution's resources is to invest in environmental controls, appropriate equipment and supplies, and ongoing programs to monitor and refresh or reformat information on unstable media in order to ensure its continuing availability. The concept of responsible custody implies that, when repositories cannot provide these basic conditions, they consider other options, such as transfer to a repository that will provide responsible custody for information of long-term value.

The Universe of Documentation

Selection for preservation encompasses a series of decisions starting with the choice of materials to be taken into archival custody. The materials currently housed in repositories are but a small portion of the available documentation. Archivists have come to recognize that modern society is unevenly and poorly documented. Cooperative analysis and planning are required to assure that adequate and appropriate documentation is identified, selected and placed under appropriate care, either in the hands of the records creators or at an archival repository. Nor can the physical preservation or reformatting of archival records be left to chance. Careful planning and selection are therefore also needed so that the limited resources available for active preservation measures are expended to insure that a broad representation of the universe of documentation remains viable into the future.

The Integration of Information and Responsibility

Modern society is documented in published and unpublished records, visual, aural and artifactual sources. Researchers use these forms of evidence in an integrated fashion, but curators often collect, describe and provide access to each format separately. Decisions about collections — appraisal, description, preservation — require a knowledge of the relationship of one form of evidence to another. Thus, the appraisal of archival records is based on knowledge of the related documentation in all formats. All curaarchival intervention in decisions regarding the very creation of those records. Nonetheless, decisions concerning what is important to maintain are the same because they are based on appraisal criteria.

The Information Explosion

During the past quarter century, advances in information technology have made it possible to create records in quantities that stagger the imagination. For example, in 1989 the National Coordinating Committee for the Promotion of History reported that "the federal government now produces every four months a stack of records equal to all those produced in the 124 years between George Washington and Woodrow Wilson."[2] At the same time scholarly research has expanded in both breadth and depth, resulting in the emergence of whole new subfields and increased interdisciplinary research efforts. Because of the increased ease with which data can be manipulated and analyzed, it is now possible to argue potential research value for virtually any collection or even for a single document. As a result, archivists now face not only an exponential physical growth in the volume of collections and a rapid proliferation of new media but also an explosion in the definition of what constitutes meaningful information. This has made it increasingly difficult to select information of enduring value for any particular topic and to decide preservation priorities for those records that are in archival custody.

The Concepts of Preservation, Life Expectancy, and Enduring Value

Difficulty in discussing preservation issues arises because the term itself has had several diverse meanings in archival usage. This lack of a common and specific understanding of the meaning of ***preservation*** for archives has impeded systematic planning. In a recent article, James O'Toole explored the changing and varied meanings to archivists of both preservation and permanence. He noted that the idea of preserving records has at present three different meanings: identifying and acquiring the original documents; providing conservation treatment to deal with chemical and/or physical problems; and transferring the information to an alternative medium.[3]

A fourth meaning can be added: providing a level of environmental control, housing, care and maintenance that will retard further chemical deterioration and protect materials from physical damage. This meaning of preservation is what this report describes more fully as responsible custody.

And finally, preservation encompasses not only individual repository actions to assure the protection of existing holdings, but cooperative efforts to identify and preserve documentation beyond repository control.

Indeed, systematic preservation management entails planning early in the life cycle of collections. In many cases, archivists and preservation professionals can work actively with records creators to identify records with archival value prior to the time when they will be transferred to an archives. Records creators can be encouraged to keep such records on more stable media and to establish archivally sound storage, handling, and maintenance procedures. These actions will forestall the need for later repairs, treatments or reformatting.

O'Toole also pointed out that the "technical distinction between extending the so-called usable lifetime of documents (a more modest and realistic goal) and preserving them literally forever was often blurred."[4] The concept of usable lifetime or, preferably, ***life expectancy*** can be used to clarify different expectations about the ultimate survival of different collections by describing the anticipated longevity of the various media on which they are recorded. Life expectancy is determined both by the chemical and physical properties of the medium and by how it has been housed and handled.

Only when records are held in responsible custody — that limits the extent of physical damage and slows the rate of deterioration — will life expectancy reach full term. To extend life expectancy beyond a medium's natural limit, conservation treatment, such as chemical and structural stabilization to contain or reverse the effects of chemical deterioration and/or mechanical damage, must be applied. Another option is to preserve the information contained in the documentation by transferring it to another medium, such as microform. Recognition of the limitations imposed by life expectancy is a constant factor in archival management.

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[2] Page Putnam Miller, *Developing a Premier National Institution: A Report from the User Community to the National Archives*, Washington, D.C., National Coordinating Committee for the Promotion of History, 1989.

[3] James O'Toole, "On the Idea of Permanence," *The American Archivist* 52, no. 1 (Winter 1989): 11-25.

[4] *op. cit.*

tors — librarians, archivists and museum staff — must work together to coordinate the full range of decisions about collections so that information is preserved as an integrated whole rather than in isolated bits and pieces.

TASK FORCE RECOMMENDATIONS

We recognize that preservation does not depend only on activity at the repository level. Real change is dependent on action on a number of fronts. These recommendations are therefore addressed to a variety of audiences, all of whom play an important role in the documentation of American society. Each group bears part of the responsibility to ensure the preservation of some portion of the universe of documentation. The goal of identifying and preserving all significant documentation can be achieved only through the cooperative efforts of archivists, other custodians of our cultural heritage, and the administrators and others who make decisions and allocate resources to carry out those tasks. The task forces have endeavored to delineate roles, define responsibilities and suggest some actions that will move us toward our goal.

Recommendations to Resource Allocators

Traditionally, institutional resource allocators and both government and private funding agencies have distinguished between published and unpublished materials in selecting preservation initiatives in libraries and archives for support. Rather than serving the broadest needs of the universe of the nation's documentation, this approach reinforces the continued fragmentation of information and the segmentation of custodial responsibility. The task forces therefore urge a realignment of funding categories so that they reflect more appropriately the needs of the total universe of documentation.

The intent of these recommendations is not to request increased funding to reduce the burden on individual repositories or administrators; rather, their purpose is to suggest a better use of scarce resources through a more balanced allocation of existing funds. Funding would therefore reflect the value of all information and result in more consistent policies and stronger and clearer requirements on repositories when they make a budget case, request an appropriation, or apply for grant funds.

To make a significant impact on the archival preservation problem nationwide, the task forces recommend that:

1. Funding and administrative priorities recognize the basic principles outlined in this document.
2. The work of federal funding agencies be coordinated more closely with one another.
3. Funds be made available for planning activities that address issues of identification and selection of significant information from the universe of documentation.
4. All submissions of requests for support of preservation activity be required to include repository acquisition policies, to stress the importance of responsible collecting.
5. Funds be made available for the improvement of environmental and housing systems in repositories, to promote responsible custody.

Recommendations to Professions

In order to combat the format-based approach traditionally used by libraries and archives, the task forces encourage members of the relevant professions, working both as individuals and through appropriate professional associations and organizations, to consider information in a broad and integrated context and to cooperate in the identification and preservation of our cultural heritage. To those ends, the task forces recommend that:

1. The implications of this document be reviewed, assessed and considered for each relevant profession in order to further the goals it articulates. For example, the Society of American Archivists (SAA), or the professional archival community, could develop guidelines for the creation of acceptable repository acquisition policies.
2. Prerequisites be developed for consortial projects that apply the basic principles outlined in this document. For example, national bibliographic databases could request a statement of acquisition policy from archival repositories whose holdings are included in the database.
3. Institutions be urged to develop cooperative strategies to preserve the complete documentary record.

4. The American Library Association and the Association of Research Libraries be encouraged to disseminate this document and draw their members' attention to the importance of its basic principles to the management and operations of libraries, particularly those that incorporate archives and special collections.

Recommendations for Projects and Future Actions

1. Documentation Projects to be Developed: It is recommended that projects be developed to identify and analyze segments of the documentation of modern society and plan for their appropriate preservation. Concepts such as documentation strategy — a plan to assure the adequate documentation of an ongoing issue, activity, function, or subject — may guide these efforts.[5] However, it will be important to incorporate consideration of physical preservation as well as of preservation of information content into planning and decision-making. One of the challenges will be to find agencies, organizations and individuals who can carry out these projects. Efforts to assess how preservation can be incorporated might start with existing documentation projects. For example, the continuing work of the Center for History of Physics on the documentation of modern physics or the documentation project conducted by the SAA Congressional Roundtable on the U.S. Congress might serve as initial case studies. New projects might be developed for areas such as dance and higher education where existing research and documentation efforts can provide a foundation for broader studies.

2. Information to be Gathered and Shared: To facilitate an interinstitutional approach to archives preservation, it is recommended that data from individual repositories about preservation be aggregated and shared at the national level. Data are already being gathered by various organizations for a number of different purposes.

Additional projects could:

- identify what preservation-related information can be collected, compiled and shared at the national level;
- assess the data already collected and the existing information-gathering processes and mechanisms for their applicability to this set of needs;
- assess the costs associated with the various processes for collecting information on preservation of various media;
- develop a new data-gathering instrument or revise an existing one;
- ensure that ongoing responsibility for gathering, aggregating and disseminating the results is lodged in an appropriate organization.
- refine the preservation field of cataloging formats so that preservation information can be recorded online for all types of media at the time collections are cataloged and so that consistent vocabulary is used.

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As noted in the preface, a decision model for assigning preservation priorities is being field tested by the Research Libraries Group (RLG), Inc., Mountain View, CA. After completion of the field test, RLG will make the results widely available. The decision model includes discussions of responsible collecting, responsible custody, and determining value.

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[5] Documentation strategy is ordinarily designed, promoted and in part implemented by an ongoing mechanism involving archival documentation creators, records administrators, archivists, users, other experts, and beneficiaries and other interested parties. It is carried out through the mutual efforts of many institutions and individuals influencing the creation and management of records and the retention and archival accessioning of some of them. The strategy is regularly refined in response to changing conditions as reflected in available information, expertise, and opinions. Strategies may be developed at levels ranging from worldwide and nationwide to statewide and community-wide. From "The Documentation Strategy Process: A Model and a Case Study," by Larry J. Hackman and Joan Warnow-Blewett, *American Archivist*, Vol. 50, Winter 1987.

Background: The Task Forces on Archival Selection

It has been difficult to do national planning or even to evaluate the relative merit of individual projects to preserve archival materials because there are no objective measures by which to judge the strength of a collection or its priority for preservation. In July 1991, the Commission engaged consultant Margaret Child to manage a project that would develop a collaborative strategy for preservation of and access to archival, manuscript and photographic collections. Two task forces — one to examine appraisal theory and practice and one to examine documentation strategy — were formed.

The groups were charged to examine existing guidelines, theory and practice in order to determine their applicability to the selection of important collections for preservation. The first was asked to explore ways to encourage repositories to introduce preservation considerations into the appraisal process as well as to use appraisal criteria and procedures to make preservation decisions. The second was charged to consider whether some of the methodologies and activities of the documentation strategy concept could also be used to provide a useful framework for posing preservation questions and making selection decisions.

Each task force met three times. The discussions gradually expanded focus from selection *per se* to a comprehensive consideration of the full range of archival concepts and functions because all were seen as being related to preservation. The second part of the third meeting was a joint session to discuss the interrelationships between the reports produced by each task force. Despite some inevitable disjunctures, there was enough congruence to allow them to be merged into a single document.

An application was made to and an award received from the Research Fellowship Program for Study of Modern Archives at the Bentley Historical Library, University of Michigan, in order to allow systematic and intensive review of the work of the task forces by an advisory committee composed of leaders of the archival profession with an interest in preservation issues. The four and a half day seminar in July 1992 was attended by fifteen task force and advisory committee members. The discussions were extremely wide-ranging and resulted in major revisions of the report. Sections of the decision model survey developed by the appraisal task force were also revised or replaced. The final text is therefore the product of an extended evolutionary process and represents the combined views of a broad spectrum of opinion.

The Task Force on Appraisal was chaired by Robert Sink of the New York Public Library and composed of: Frank Boles, Central Michigan University; Paul Conway, Yale University Library; Edie Hedlin, Consultant; Sarah Wagner, National Archives and Records Administration; and Christine Ward, New York State Archives. The Task Force on Documentation Strategy was chaired by Timothy Ericson of the University of Wisconsin at Milwaukee and composed of: Bruce Bruemmer, University of Minnesota; Richard Cox, University of Pittsburgh; and Karen Garlick, Smithsonian Institution. The Advisory Committee included: Larry Hackman, New York State Archives; Anne Kenney, Cornell University; James O'Toole, University of Massachusetts, Boston; and Helen Samuels, Massachusetts Institute of Technology. Also in attendance at the Bentley meeting were: Nancy Elkington, Preservation Program Officer at the Research Libraries Group; and Evelyn Frangakis, Manager of the Society of American Archivists Preservation Management Training Program.

The Commission on Preservation and Access is a private, nonprofit organization acting on behalf of the nation's libraries, archives, and universities to develop and encourage collaborative strategies for preserving and providing access to the accumulated human record.

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 57

JUNE 1993

Brittle Books Program Started in Germany

The German Research Council (Deutsche Forschungsgemeinschaft, DFG) in Bonn has initiated a program to microfilm deteriorating library collections, with an initial appropriation of over DM 1 million. The program was developed to encourage similar initiatives in individual states (Länder) and to promote standards for filming and bibliographic control.

The DFG also is supporting the creation of a German Register of Microfilm Masters that will collect bibliographic citations and share them with the European Register of Microfilm Masters (EROMM). The Commission is participating in EROMM's development through its International Program.

In its planning document, the DFG stresses the importance of access to deteriorating collections. Priority is given to journals and yearbooks and parts of special collections and central disciplinary libraries. Microfilms created will be on loan to the recipient of financial support, with the DFG retaining the right to request the delivery of a silver duplicate to a central German collection and distribution center, should one be created at a later point.

Bellagio Conference Attendance

As of mid-May, the following participants have acknowledged their attendance in the upcoming Commission conference on preserving the literary heritage to be held June 7 - 11, 1993, at the Bellagio, Italy, Study and Conference Center. The conference is supported by The Rockefeller Foundation. The 23 participants, 13 from Europe and ten from the U.S., represent fields that depend heavily on the deteriorating literature printed on acid paper.

This updates the list in the January 1993 newsletter.

Dr. Birgit Antonsson
Director
The Royal Library
National Library of Sweden
Stockholm
SWEDEN

Rev. Msgr. Paul Canart
Biblioteca Apostolica Vaticana
ITALY

Professor Pieter J.D. Drenth
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Royal Netherlands Academy of Arts and Sciences
THE NETHERLANDS

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Director General of Unit DG X
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Professor Christoph Graf
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Professor Michel Jouve
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Professor Knut Kleve
Klassisk og Romansk Institutt
Oslo
NORWAY

Professor Vittorio Marchis
Dipartimento di Meccanica
Politecnico di Torino
Torino
ITALY

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Testimony for NEH Cites Congressional Accomplishments

David H. Stam, University Librarian at Syracuse University, testified before Congress on behalf of 1994 appropriations for the National Endowment for the Humanities (NEH) at hearings on May 12, 1993. Speaking as a librarian and scholar, Stam stated that "Congress can be proud of its accomplishments" in supporting the brittle books program of NEH's Division of Preservation and Access. Stam spoke before the subcommittee on the Interior and Related Agencies on behalf of the Commission, the Association of Research Libraries, and the National Humanities Alliance. He cited the progress of the 20-year brittle books program, which is continuing to microfilm the target number of volumes — well over 500,000 — despite a reduction in funding. The testimony also called for a new emphasis on digitized formatting. The hearings were originally scheduled for May 5, 1993.

Inside: "Perspectives of the Scientist . . ."

Included in this newsletter is the printed version of a presentation by James R. Druzik, Conservation Scientist at The Getty Conservation Institute, to the February 18,1993 planning meeting of the Commission's Science Research Initiative. In *Perspectives of the Scientist: On the Myopia of Science and the Dynamic Range of the Human Mind*, Druzik provides insight into the scientific process of discovery and how the human mind is the key to unlocking the scientific answers to providing preservation and access.

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Commission Publications Online

The Preservation Department at Stanford has begun to scan Commission publications for its CoOL database — Conservation Online. CoOL, a Wide Area Information Server (WAIS), is dedicated to providing Internet access to a full text database of conservation information. The database covers a wide variety of topics of interest to those involved with the conservation of library, archives and museum materials.

Suggested Reading

A collaborative project between Cornell University and Xerox, and the Commission's Project IBID are the topic of a speech given by David Cohen, Dean of libraries at the College of Charleston, to the North American Serials Interest Group (NASIG) meeting. The speech, published in *The Serials Librarian*, Volume 23, #34 (pp. 149-155) discusses the project at Cornell where staff in the library and computer center, working with Xerox Corporation, collaborated to test a prototype system for recording deteriorating books as digital images and producing, on demand, quality paper facsimiles. Cohen also covers Project IBID, a proposed not-for-profit corporation that would keep needed, recently published books in print by scanning them and using the Docutech printer to produce a limited number of copies of out-of-print books on demand.

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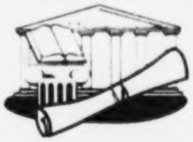
The Commission on Preservation and Access was established in 1986 to foster and support collaboration among libraries and allied organizations in order to ensure the preservation of the published and documentary record in all formats and to provide enhanced access to scholarly information.

The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialists and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor
Sonny Koerner - Managing Editor



Ohio Preservation Plan Receives NEH Grant

Millions of books currently being used in Ohio's public and private libraries are the focus of a new preservation program led by the State Library of Ohio and the Ohio State Historical Society.

The two-year program will be funded by a $49,000 grant from the National Endowment for the Humanities (NEH) for library preservation activities, and will involve establishing a statewide planning committee. The project will include interviewing professional and governmental leaders, five town meetings and leading numerous discussions throughout the state to elicit participation from groups interested in preserving various kinds of materials. Members of the planning committee will publicize their findings and recommendations in the biannual Ohio Model Preservation Action Agenda.

New Member Joins College Libraries Committee

Victoria L. Hanawalt, College Librarian at Reed College, Portland, Oregon, has accepted an invitation to join the Commission's College Libraries Committee. A long time advocate of raising the level of awareness of preservation issues among college librarians, Ms. Hanawalt plans to join the committee at their next meeting scheduled for Thursday, October 7, 1993, in Gettysburg, Pennsylvania.

Bellagio Conference Attendance

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Perspectives of the Scientist: On the Myopia of Science and The Dynamic Range of the Human Mind

By
James R. Druzik
Conservation Scientist
The Getty Conservation Institute

This paper is a printed version of a talk presented to the February 18, 1993 planning meeting of the Commission's Science Research Initiative. The Commission is distributing the paper to further stimulate discussion about research methods involved in the scientific and technological aspects of preservation. The Science Research Initiative provides opportunities for librarians, archivists and scientists to explore jointly how scientific research can be obtained, interpreted, and applied to solve critical preservation issues. The Commission is scheduled to sponsor a second Science Workshop for Preservation Administrators from September 15 to 17, 1993 at the Belmont Conference Center in Elkridge, Maryland.

At the Library of Congress, Round Table on Preservation Research and Development, September 28-29, 1992, Paul Whitmore presented the keynote address entitled "The Myopia of Preservation Research." Dr. Whitmore's central premise was that conservation science is inherently nearsighted in the sense that objects located father from the eye are fuzzier, harder to resolve, less vibrant and grayer than objects closer. Rather than physical distance, the eye of the mind of science tries to "see" ahead in time and thus make predictions about future behavior. Such behavior might be the embrittlement of coated papers, the shelf-life of PVA double-fan adhesive bindings, or simply the selection of a better conservation treatment.

As any nearsighted person can tell those of you without optical appliances, the objects easiest to discern are those which are large, have few details, and are relatively close. By analogy, it is easier to measure a big effect over a short time than to measure a small effect years or decades to come. It is perhaps most difficult to resolve a series of interrelated small effects in a complex system over time when their rates are constantly shifting. Predicting the acceptability (including stability) of a new pigment is an example because there are photochemical effects, temperature and humidity dependencies, acid/base sensitivities, particles and binders, and no less than half a dozen atmospheric oxidants that may interact. This is like trying to "see" the contents of an automobile engine on a smoggy day from two miles away and making a diagnosis of why it won't run — a slight exaggeration, but useful. Yet, that is frequently perceived as what scientists "do" in popular mythology, and cosmologists who theorize on the origin and fate of the universe don't make it any easier for those of us with more humble goals. This mythology is indeed very dangerous because it encourages the blurring of distinctions between fact and opinion.

But scientists are incorrigible optimists nevertheless. They have developed all sorts of tools to assist their myopia. Some tools let them see in short wavelengths of light, and others let them visualize heat, sound and molecular vibrations. A few tools even let them tinker with the fundamental building blocks of matter, thereby deducing its larger structures and imaging what its smaller ones may be. These are but the physical tools of analysis — the scientist also has a suite of mathematical tools for improving eyesight. These can be simple equations pounded out on a hand calculator or complex mathematical models requiring a fast computer. They generate isoperm diagrams, estimate operational costs of buildings, reduce millions of climatic data points for archeological site management, or perform FFT analysis of digital images of art works. There are many other classes of tools but the point is simple, whether we are discussing a hand magnifying lens or a super-cooled super-collider: These aids are relatively simple in looking through time and, Cray computers notwithstanding, altogether stupid within themselves. They seldom provide a single answer unassisted by the human mind. And this is the crux of why science has difficulties satisfying the conservator or preservation manager.

I have found no tool — machine or device, computer or algorithm — that can contemplate its own existential realities. At least until now there have been no HAL 9000 entities. Humans, on the other hand, delight in such activities and partake of them from that age where verbal sounds become associated with symbolic meaning until death. The power and diversity of interconnections in the human mind are virtually beyond any form of reasonable scientific description except in the simplest biochemical ways. For this reason it is very difficult for the mind to ask a simple question. It takes discipline and training to seek the simple. The brain is not easily satisfied.

One way to look at this is to borrow a concept from optical sensors technology and consider the mind as having a vast cognitive "dynamic range". By way of comparison, it is easy to under- or over-expose photographic film, much harder for the human eye, and more difficult yet for CCD sensors. With respect to light, photographic film, the eye, and the CCD have higher and higher dynamic ranges — that is they can see in low or high light levels easily. The human eye even gets so used to operating in wide ranges, it is a very poor judge of light intensity.

> *. . . it is difficult for the mind to ask a simple question . . . it takes discipline and training to seek the simple.*

The human mind has the greatest dynamic range in existence. With equal facility it can enjoy the strategy of a football game, play the game of chess with 10^{60} possible moves, or contemplate the notions of love and death, infinity and the eternal. And yet, to each individual who enjoys these diversions, the effort put into it often seems to differ little, even though these operations vary tremendously in their complexity. Again, like the eye, the mind is a poor judge of intensity.

For this reason, preservation managers and conservators, as the users of scientific knowledge, often pose a greater problem to scientists than the problem itself. We both share the most powerful of our tools, one that can spin a hopelessly convoluted inquiry. Going back to Paul Whitmore's paper, the question, "How do I safely bleach discolored paper?" is not a simple question at all because it is proposing a number of related questions: "What is the cause of the discoloration? What treatments will effectively bleach the discoloration: Are there harmful side-effects in the short-term, or in the long-term?" In other words, because of our dynamic range of thought, the *apparently* simple question asked above is not perceived as complex as it is. In another example, Peter Waters proposes to ask, "How do you model the aging of whole collections of disparate books of varying sizes, ages, materials, and states of preservation, simultaneously and in 'real time'?" The mind is indeed a poor judge of complexity.

Many of the proposals for research I have read that make up the science research initiative of the Commission on Preservation and Access are excellent. As equally easy to note, many are dynamic and speak of research programs rather than single projects. Some are models of difficulty, however. This does not mean that they are any less worthy of pursuit. It does mean, though, that we are dealing with several orders of magnitude in the resources and time required to address them. Science can only progress in simple steps. Each step is but a single building block used to construct our knowledge. The risk associated with complex problems is one or quality control in that all the blocks may not "be up to code". Since we must step slowly, patience will be as important as resources and time. By bringing the preservation managers deep into the intricacies of the issues early, I feel that they will then become the strongest advocates of this present initiative.

Therefore, the perspective and message of one scientist is this: In spite of our impressive array of technical devices and machines, the most versatile tool of all is the one we use to frame the question we seek to answer. If we use that tool carefully and with supreme restraint we shall make progress together. Use it carelessly, and we might find ourselves in the same boat as St. Augustine, who while walking along the beach one day, contemplating the nature of God, encountered a small boy with a bucket. The child was taking water from the ocean and emptying it into a hole he had dug higher up on the beach.

> *By bringing the preservation managers deep into the intricacies of the issues early, I feel that they will then become the strongest advocates of this present initiative.*

"What are you doing?" asked St. Augustine.

"I'm emptying the ocean," said the boy.

"But that's impossible," remarked the Saint.

"I'll finish my pursuit long before you understand anything about the nature of God," the boy remarked before disappearing.

The real difficulty is in balancing the halting, discipline caution of the scientific process of discovery with the imagination and limitless inquiry of the free-ranging human spirit.

Legislators and Administrators Focus of SMU Symposium

A symposium on Policies for Preservation in the Southwest was held April 29, 1993, at Southern Methodist University, Dallas, Texas. The day-long conference included eight speakers covering a range of topics, from the virtual library to preserving Chicano literature. Reaction to the conference was very positive, according to one of the chairmen, who said a vast amount of literature and information was passed on to the more than 70 attendees.

Designed to involve university administrators and legislators, the event included such participants as museum and library board members, and faculty, university and company archivists. Speakers included Billy E. Frye, chairman of the Commission board, and David B. Gracy II, board member.

The general purpose of the symposium was to inform leaders who are instrumental in providing funds and support to libraries of the urgency of preserving and conserving resources.

Patrick Heath, Mayor of Boerne, Texas, spoke about public funds and access to legislators, and how to work with the system of government in order acquire support from these areas. Heath suggested avoiding library jargon, using library patrons for support, answering questions before they are asked, and "assuming that the legislator is as committed as you are to the power of the word!"

> . . . *"assume that the legislator is as committed as you are to the power of the word!"*

Felipe Ortego, lecturer, scholar, critic, and teacher at Sul Ross State University, spoke on behalf of the Chicano and Hispanic literature, noting that this is a multi-faceted and multicultural nation, and that we must preserve inclusively. The symposium was co-sponsored by six organizations, including the Commission.

Preservation Management Seminar Participants

The 21 participants scheduled to take part in the second Preservation Management Seminar for College Librarians at Wellesley College, MA, this July represent colleges and universities from around the nation, as well as four other countries.

One of the major focal points of the seminar will be to prepare college librarians with part-time preservation responsibilities to plan and implement coherent and effective preservation programs appropriate to their needs and resources. The diversity and geographical differences among the participants will help provide a broad-based pool of library staff dedicated to continuing and improving preservation efforts. The workshop is designed and operated by the Southeastern Library Network, Inc. (SOLINET) in Atlanta, Georgia, and co-sponsored by the Commission, which is providing scholarship funds. The following participants have acknowledged attendance as of mid-May:

Michaelle L. Biddle
Head, Access Services & Preservation
Wesleyan University [CT]

Maria L. Cabral
Senior Librarian
National Library of Portugal

Linda Chase
Head, Database Management Department
American University [DC]

Linda A. Cranston
Serials Librarian
Longwood College [VA]

Sheila M. Hague
Book Conservator
University of St. Thomas [MN]

Sandra W. Heinemann
Acting Director [Head Cataloger]
Hampden-Sydney College [VA]

Maureen Henry
Head of Technical Services
University of the West Indies (Trinidad)

Renee Jadushlever
Special Collections Librarian
Mills College [CA]

Albert Joy
Collection Development Librarian
University of Vermont

Clara Keyes
Special Collections Librarian
Morehead State University [KY]

Marilyn Kierstead
Reader Services Librarian
Reed College [OR]

Charles R. Lakin
Reference Librarian
Colby College [ME]

Frank Molinek
Assistant Head of Cataloging & Preservation
  Coordinator
Davidson College [NC]

Mary Webb Prophet
Documents/Reference Librarian
Denison University [OH]

Susan Rishworth
History Librarian
American College of Obstetricians &
  Gynecologists [DC]

Alma B. Rivera-Aguilera
Director
Universidad Centroamericana - El Salvador

Dani Roach
Periodicals Supervisor
Macalester College [MN]

Conny Rojas
Director, Biblioteca Central
Universidad Centroamericana - Nicaragua

Robert Siever
Associate Librarian for Collection Management
Franklin and Marshall College [PA]

Gwendolyn Snodgrass
Technical Services Librarian
University of Louisville, Kornhauser
  Health Sciences Library [KY]

Dayna L. Williams-Capone
Assistant Librarian for Public
  Services/Access Services
Austin College [TX]

Go ahead, experience it yourself! Open the books in your library randomly. Contemplate the disaster. Yellowing, brittle as if they had been passed through the oven, breaking apart, they crumble between your hands like a package of confetti for the 14th of July. One would think that mice had eaten the corners of the pages. Whereas at the library of St. Geneviève, the old books from the earliest days of printing do not show a single wrinkle. Not a tear, not a trace of yellow, nothing. Fresh as if they had just emerged from Gutenberg's press. Well then, are we all barbarians? Perhaps, but we're not the sole culprits. The main villain is called 'acidification,' a virus which has taken hold of the books since the second half of the nineteenth century.

—Translation of quote from "Acide Assassin" in the French publication *Telerama*, No. 2253, 17 March 1993

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

NUMBER 58

JULY 1993

Congressional Testimony Supports NEH Preservation Program

The need for continued support for preservation microfilming, together with new research into digital technologies, was at the forefront of testimony on appropriations for the National Endowment for the Humanities (NEH) presented by David H. Stam, University Librarian at Syracuse University, on May 12, 1993, before the Subcommittee on the Interior and Related Agencies.

Stam testified on behalf of the Association of Research Libraries, the National Humanities Alliance, and the Commission. The testimony stressed the importance of sustained funding for the NEH Division of Preservation and Access to maintain the momentum of its 20-year brittle books program:

> *When Congress funded the first year of this 20-year effort, it set in motion a dynamic process which has resulted in the preservation microfilming of approximately 500,000 titles during the past five years. This achievement is far greater than it might seem, for not only have the individual books been preserved for the individual institutions which owned them, but service copies can now be obtained at low cost by any other institutions which have brittle copies of the same titles, thus avoiding the higher initial costs of preservation. They are also easily accessible to any other libraries or users who have need for those titles. Thus the NEH grants to large research libraries have directly and indirectly benefitted all of the nation's libraries and their users.*

Stam described how the NEH preservation program had "enabled the nation's research libraries to play a

Continued on p. 2

Universities of Connecticut, Pittsburgh; AAP Join Commission Sponsors

The Universities of Connecticut and Pittsburgh, and the Association of American Publishers (AAP) have become Commission sponsors, raising the number of supporting institutions to 60. Sponsors consist of 23 public and 27 private educational institutions, as well as eight public, state, and federal libraries; one higher education coalition, and one association. This continuing support, along with funds from foundations, provides the Commission with the ability to sustain existing nationwide activities and to develop new priority areas. All sponsors receive expedited mailings of publications, newsletters, and other information. The Commission's two preservation and access exhibits are made available to sponsors at no charge.

Archive Using Hybrid Technologies to Preserve Access to Photographs

The Basel (Switzerland) Mission Archive is conducting a pilot project to preserve and provide international access to a collection of 50,000 historical photographs taken in Ghana, Cameroon, South India, South China, and Indonesian Kalimantan from the 1840's to 1945. The project is using a combination of new technologies. Photographs are re-photographed on high-density, long-lasting film and transferred from film into an electronic image bank. Because of the speed of technical development in the field, no decision has yet been made about the technology of the image bank to be used for international access.

In the first three years, the project has sorted and grouped all 50,000 images, created a basic catalog for 36,000 of them, and re-photographed and transferred 28,400 into an image data bank.

Re-photography has a key role in the project according to project personnel because "it is not only a practicable step towards the preservation of large numbers of images in the highest resolution possible, but also makes possible the mechanical transfer of the images into any image bank technology."

The photographs document the mission's considerable interest in the cultural environments where its missionaries have worked. Half of the photographs in the image bank date from before 1914. Project directors have stated that, "Our plans go beyond

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INSIDE: "PRESERVATION FILM: PLATFORM FOR DIGITAL ACCESS"

Included in this newsletter is the report, *Preservation Film: Platform for Digital Access Systems*, one in a series exploring new technologies for preservation and access.

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Readings

The Commission of the European Communities has produced a practical guide and directory of permanent book paper as a way to raise awareness throughout Europe of the breadth and complexity of the problem of "millions of books turning to dust each year in our libraries." The 31-page directory lists acid-free and permanent papers available in Austria, Denmark, Finland, France, Germany, Great Britain, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland. It also includes a nine-language introduction to the brittle book problem, a technical note on the self-destruction of acid-free paper, and a list of recommendations of the Experts' Meeting *Conservation of acid paper materials and the use of permanent paper*, organized by the Commission of the European Communities and the Dutch government and held in the National Library of the Netherlands, December 1991. Further information on the *European Directory of Acid-Free and Permanent Book Paper*, which was edited by the European Foundation for Library Cooperation/Groupe de Lausanne, is available from the Commission of the European Communities Directorate-General X, Audiovisual Information, Communication, Culture, "Culture Unit", rue de Trèves 120, B-1049 Brussels, Belgium.

> ***We have shown the French version of* Slow Fires *on the afternoon of our General Assembly with a success beyond all expectation. It seems that TV, more than the written word which we so strain to preserve, will strike the imagination and the emotions even of people most concerned with the survival of The Book.***
>
> —Lily Powell-Froissard, Vice-Présidente,
> Association Sauver Les Documents En
> Péril Des Bibliothèques Francaises

Preservation Analysis and the Brittle Book Problem in College Libraries: The Identification of Research-Level Collections and Their Implications examines priorities for treatment of brittle research materials and potential contributions of college libraries to national preservation efforts. The authors conducted condition surveys in three college libraries, identified titles as curriculum support, low-use research, or special collections materials, and assessed their physical condition. The results indicate that the libraries own significant numbers of low-use research volumes that are brittle and in some cases held by few other libraries nationwide. The article was published in the May 1993 issue of the *College & Research Libraries*, pp.227-239.

White House Requests Two-Year Extension for NEH and NEA

White House officials recently proposed that Congress grant a two-year reauthorization for the National Endowment for the Humanities (NEH), the National Endowment for the Arts (NEA), and the Institute of Museum Services, without making substantial changes within those agencies. With the last reauthorization in 1990, the current legislation that authorizes the agencies will expire at the end of September. With a two-year extension, full reauthorization of both endowments and the institute would not occur until 1995.

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The Commission on Preservation and Access was established in 1986 to foster and support collaboration among libraries and allied organizations in order to ensure the preservation of the published and documentary record in all formats and to provide enhanced access to scholarly information.

The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialists and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor
Sonny Koerner - Managing Editor

Congressional Testimony

Continued from p. 1

collaborative role in bringing in smaller academic and public libraries, and other historical societies, archives, and museums into the national infrastructure for preservation and access."

The testimony urged that $2.3 million be restored to the NEH budget to reflect the original sixth-year program target of $20.3 million for library and archival preservation programs and stated that funds are needed for further exploration of the preservation potential of digital technology:

> ***There seems no doubt that digital technology has the potential to expand dramatically the rapid availability of information to users everywhere. We are confident that continued research in digital technology, under NEH's sponsorship and leadership, will provide the catalyst for perfecting these new technologies in the ongoing process of preserving the nation's heritage.***

Hybrid Technologies

Continued from p. 1

merely returning photographs as archival objects to the areas in which they were taken. Pictures offer a basis for inter-cultural conversation whose potentiality has been scarcely noticed hitherto, and which we would like to see explored. . . ."

More information is available from: Basler Mission, Abt. Archiv/Photoprojekt, Missionsstrasse 21, CH-4003 Basel, Switzerland.

A Science · Standards Review

The Stability of Optical Disks

The transition from a primarily print-on-paper environment to one that involves digital and optical technologies is presenting new choices of format for archival storage and access. This review was prepared at the Commission's request by Peter Z. Adelstein to provide a scientific and standards perspective on the use of optical disks as a storage medium. It is one of a series of publications and reports from the Commission on the capabilities of digital and optical technology for the capture, storage, transmission, and distribution of preserved information. For other technical discussions on the use of microfilm and digital technologies for preservation and access, contact the Commission for a current publications list.*

• • •

There has been tremendous progress in imaging science during the past decade as a result of the development and commercialization of optical disks. They have found applications in the scientific, business and consumer communities where they have very powerful advantages. Optical disks (including CDs) offer great compaction of information and are particularly well suited to easy retrieval and ready access. Being in a digital format, they allow ready transmission of information. Since optical disks can be optically read without contact, disk wear upon repeated use is not a problem. However, this does not mean that they can be expected to have a very extended life compared to other imaging materials. Unfortunately there have been some publications which are not clear on this subject and some which suggest that optical disks are the ideal archival media. It is the purpose of this article to address this specific application and put the archival use of optical disks into some perspective.

Optical Disks as an Archival Medium

When we talk of an archival medium, we are talking about long-term retention of information for more than just decades. Commercial and consumer applications frequently require a useful life expectancy of optical disks for periods ranging from 10-30 years. However, libraries and archives are interested in information preservation for hundreds of years. It is with this requirement that optical disks present some problems.

Before discussing optical disks, let us review the attributes of photographic materials for preservation storage. The use of photographic materials as an archival medium rests on three factors. (1) These materials have been in existence for a long time and a great deal is known about the stability of both the photographic image and the photographic paper, plastic or glass support. (2) National and international standards have been adopted giving specifications for photographic film and recommended practices for the storage conditions and storage enclosures for photographic materials. (3) And lastly, photographic images are human readable. At most they require a light source and a means of magnification, both being simple requirements in the advanced scientific societies of today.

When we talk of an archival medium, we are talking about long-term retention of information for more than just decades.

---

(1) In comparison, optical disk technology is relatively new. Photographic materials have been around for over 100 years, optical disks for about 20. The stability of optical disks is obviously very dependent upon the characteristics of a particular product and the raw materials used, e.g., metal or plastic. The stability will vary from manufacturer to manufacturer and may even vary within a product type.

(2) While there have been some excellent studies done on the longevity of this material, these have not yet resulted in any national or international specifications. Likewise documents do not yet exist detailing storage conditions that represent industry consensus. These points will be discussed in more detail later in this report.

(3) It is the third factor which is particularly pertinent: Optical disks are not human readable, requiring a system that includes the storage medium, hardware and software for access. The latter two represent two potent problems.

Availability of hardware to read optical disks should not be a problem when we talk of decades. However, hardware availability one hundred years from now is much more problematic. Equipment will wear out with time and repair is not always possible. New equipment or replacement parts will only be available if a market exists. It is unlikely that the archival community alone will provide a viable market for the hardware manufacturer.

Of even greater concern than the wearing out of hardware components is hardware or format obsolescence. Optical disk technology is a rapidly changing field and new formats are continually being developed. This development will not stop as the scientific development community improves data compaction, easy access or hardware simplicity. Many consumers concerned with data acquisition, storage and manipulation faced similar problems with the obsolescence of equipment to read punch cards or play magnetic tape in a reel-to-reel format.

Currently, the only practical solutions to hardware deterioration or obsolescence are to reformat the archival

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Optical Disks

Continued from p. 3

files on a regular schedule or before they become obsolete, or to store duplicate hardware. Clearly, the new technological environment will require new ways of approaching these problems.

Permanence Standards of Optical Disks

Standards in the United States are published under the umbrella of the American National Standards Institute (ANSI) and are prepared by committees accredited by ANSI. The need for standards on the permanence of electronic imaging was recognized by ANSI in 1987 and in 1989 Subcommittee IT9-5 was formed with this objective. This Subcommittee is composed of representatives from manufacturers, government agencies and consumers. They have been meeting twice a year since that time. The first activity was to divide the Subcommittee into several task groups, each with a specific goal. These included a task group on definitions, on storage conditions, and on magnetic tape specifications.

Of even greater concern than the wearing out of hardware components is hardware or format obsolescence.

One task group is concerned with writing a test method which will predict the life expectancy of CDs. It involves incubating the disks at elevated temperature and humidity and measuring the optical read-out. This proposed test procedure is now in the first stage of balloting and it will be several years before it is published. While it represents a very significant advance in the application of optical disks for long-term storage, it must be recognized that it involves only the media. It does not address the optical disk system and the concerns about equipment deterioration and obsolescence still exist.

Conclusions

The tremendous advantages of optical disks are data compaction, access, retrieval and transmission. However, this technology still lacks some of the attributes required for archival storage where a long life expectancy is desired. As an interim strategy for specific archival applications, some facilities are using a hybrid system with photographic film being the storage medium and optical disks being used for access and transfer of information.

---

[*] Dr. Peter Z. Adelstein is chairman of Technical Committee IT9-5, which prepares ANSI standards on permanence of imaging materials, and a research associate with the Image Permanence Institute at the Rochester Institute of Technology. His areas of work include the physical properties of plastics, gelatin, photographic film and magnetic tape. He holds a PhD in physical chemistry from McGill University.

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The Commission on Preservation and Access

PRESERVATION FILM: PLATFORM FOR DIGITAL ACCESS SYSTEMS

by
C. Lee Jones
President, MAPS The MicrogrAphic Preservation Service, Inc.

This report is one of a series exploring new technologies for preservation and access. Previous Commission publications on film and digital technologies include: "Opto-Electronic Storage – An Alternative to Filming?" by Dr. Hartmut Weber, in *Commission on Preservation and Access Newsletter*, February 1993; *A Hybrid Systems Approach to Preservation of Printed Materials*, by Don Willis (November 1992); *Electronic Technologies and Preservation*, by Don Waters (June 1992); and *Preservation of New Technology. A Report of the Technology Assessment Advisory Committee* (October 1992).

The entire world of scholarship and research, with significant leadership from the library community, is committed to the belief that our information future will be far more digital than it is even in today's environment, replete as it seems to be with computers and telecommunication services. A month does not pass without some development which promises to help manage our burgeoning databases more effectively, provide easier access to their contents, or provide more compact storage or high transmission speeds and greater transmission band width.

In this context, a growing group of professionals in libraries, archives, museums, historical societies, and similar organizations are equally committed to finding the most efficient ways to preserve that information created in the past which is in danger of loss through embrittlement of the medium upon which the information is recorded or through intensive use of the medium. Most of the attention has been directed toward preservation of the printed word, though graphic images, photographs, negatives, and prints are receiving increasing attention as is information preserved in magnetic and optical media. These preservation efforts are intended to preserve information for future use, a future, as noted, which will be increasingly digitally oriented. Hence, the preservation medium selected must have the capability of supporting a wide range of digital access systems.

Initial preservation reformatting efforts were focused entirely on microfilm as the medium of choice. For the last ten years or more, attention has been directed at the potential alternative media might have for preservation purposes. Rigorously precise studies indicate that the 500+ year life expectancy of microfilm, when properly prepared, stored and managed, far surpasses any other medium in terms of longevity and ability to accurately reformat information. No other technology is yet in a position to challenge film as a preservation medium for print on paper materials. While it is useful to continue the evaluation of possible alternatives, the majority of the preservation community continues to view microfilm as the only truly long term preservation alternative.

The equipment used for most preservation filming since its inception in the mid-1930's has been the Kodak MRD line of cameras. This workhorse of the preservation filming community was not significantly altered during its 50+ years of service. Indeed, and now unfortunately, the preservation standards specific to filming, including the RLG Guidelines, have been established with the MRD cameras in mind. In fact, the standards push the operating limits of the MRD. This becomes particularly important in the area of resolution where the minimum acceptable resolution for preservation purposes is 120 lines per millimeter. If we are serious about preparing our preservation film for the digital future, we must reach beyond that minimum in order to capture as much detail as possible.

Late in 1989, Kodak announced that it would no longer manufacture the MRD and would not replace it with any alternative 35 mm microfilm camera. Bad news for the preservation community. However, there are alternative cameras for the high quality required to capture images for future generations. Firms such as Gratek (England), Elke (England), Zeutschel (Germany), and Schautt (Germany) all produce cameras superior to the MRD. Probably the premier example of alternative cameras is a small firm in Garmisch-Partenkirchen , Germany, Herrmann & Kraemer, which builds its own cameras in order to achieve the quality results they expect. As Kodak abandoned the 35 mm camera field, Herrmann & Kraemer began to manufacture cameras for sale. The Herrmann & Kraemer (H&K) camera is an order of magnitude superior to the MRD and to many other competing cameras as well, though there is a premium in terms of price to be paid for this quality. It is a computer controlled camera with incredibly fine adjustments for illumination, reduction, exposure time, all coupled with the finest optics available. Resolution, even when not completely adjusted, is 40% better than the MRD and with some careful tuning, can produce resolutions which are more than 60% better, in the 200 lines per millimeter range.

The importance of high resolution film is based on the rule of 25.4. There are 25.4 millimeters per inch. Scanned resolution is evaluated in dots per inch. Scanning at 1,000 dots per inch sounds like wonderful resolution until one divides that 1,000 dots per inch by 25.4 to produce a comparison to film resolution. The result, for those of you without immediate access to a calculator, is just under 40 lines per millimeter! Those who would suggest that we need to scan first, run up against this 25.4 rule very quickly. If they can scan at 1,000 dots per inch, and few can at this stage, the conversion to film, which can be done, will produce a film resolution of less than 40 lines per millimeter. On the other hand, film of 200 lines per millimeter is the equivalent in inches of over 5,000 dots per inch (200 times 25.4). Thus, the preservation community, committed as it obviously is to preserving our intellectual heritage for future use, needs to make a commitment to high resolution film which can be easily scanned into digital formats, retains more resolution than scanning technology can presently capture and precludes a dependence upon a fast changing digital environment that can leave pioneers with the unfortunate and expensive task of recapturing information in the next digitally based technological innovation. For these reasons, the preservation community must opt for the highest quality microfilm that can be produced.

A second factor which is critical to facilitating scanning of preservation film for digital access systems is the issue of density variation within a reel

Published by
The Commission on Preservation and Access
1400 16th Street, NW, Suite 740
Washington, DC 20036-2117
(202) 939-3400
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July 1993

Reports issued by the Commission on Preservation and Access are intended to stimulate thought and discussion. They do not necessarily reflect the views of Commission members.

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∞ The paper in this publication meets the minimum requirements of the American National Standard for Permanence of Paper for Publications and Documents in Libraries and Archives — ANSI/NISO Z39.48-1992.

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of film. Preservation standards allow a relatively wide range of densities on a reel of .20 density points. However, the narrower the range of densities on a reel, the more readily it can be scanned without making adjustments for swings in density. There is at least one system that is specifically designed to produce preservation film with narrow density ranges, ExpoSure™ developed by MAPS The MicrogrAphic Preservation Service, Inc. A US patent was awarded for ExpoSure™ in 1992 and it has resulted in even higher quality preservation film by coupling the high resolution inherent in the H&K with extraordinarily narrow density ranges (often less than .05 density points) on any given reel of film. These two characteristics, high resolution and narrow density ranges, resulted in film that is far more easily scanned into a variety of digital formats. Anecdotal evidence suggests that film with narrow density ranges and high resolution can be scanned with significantly fewer adjustments during the course of the scan.

Normal microfilm is a high contrast recording medium that was never designed to capture halftone or continuous tone material, photographs, negatives, prints, and heavily illustrated printed material. But, it is possible to link the capabilities of the new high resolution camera to a newly available continuous tone filming (CTF) process that successfully captures continuous tone images with great fidelity and adheres to all preservation standards. Continuous tone filming is not new, but previous techniques either used non-preservation film bases (acetate) or suffered from loss of resolution both during original image capture and during duplication. CTF technique suffers from neither of these limitations. Resolution occasionally exceeding 200 lines per millimeter is achieved using this technique. While there is some loss of resolution during duplication, it is often not measurable; that is the resolution as measured from the standard test target remains the same. One measure of quality is that third generation CTF images have been taken to a reputable photo shop and high quality paper prints produced.

The preservation community now has a range of options available in order to prepare preservation film for digital access systems. Cameras of superior quality are available, though not widely deployed as yet. Part of the reluctance to deploy new generation cameras is their cost and the lack of active demand for higher resolution. Further, as long as the acceptable density range for preservation film is as broad as it currently is, we are preparing film that will require constant adjustment during scanning operations, adjustments which will force the cost of such scanning to rise. Until the market, that is the preservation reformatting market, demands higher quality, it will be less widely available than it is now.

Digital access systems are proliferating and can be found in nearly every institutional venue in which preservation programs also exist. Some film to paper printers use scanning technology to capture the image before it is transferred to paper. Film of primarily textual material is being scanned into CD-ROM products and as the quality of film improves and more heavily used material is filmed, more and more CD-ROM products will be produced from film. CTF film has now been shown to produce superb images using Kodak's Photo CD system, from which images can be captured by any number of software programs for distribution on floppy disks or distribution over a telecommunication network. This brand new option for preservation quality graphic images promises to open completely new access systems for graphic and text images.

The importance of high resolution film is based on the rule of 25.4

Vendors of preservation filming services have focused their recent service enhancements on ways to reduce the cost of getting material onto film by offering prefilm search services, material preparation, print master storage, post film cataloging, etc. All of these services have an essential role in seeing that the most material is reformatted with available resources. However, we often lose sight of the objective, serving the information needs of the future, and concentrate on doing things as quickly and cheaply as possible now. If those current decisions result in preservation products that serve only immediate needs and fail to serve the longer term information needs of the future, our decisions will be viewed as very expensive ones by those who follow us.

The preservation reformatting goal of every library, archive, museum, and historical society needs to be to prepare preservation microfilm for the digital present and future. We can not afford to preserve materials more than once. To simply reformat endangered materials into a form resistant to scanning or one that complicates scanning is a serious disservice to scholars and researchers of the future.

The Commission on Preservation and Access is a private, nonprofit organization acting on behalf of the nation's libraries, archives, and universities to develop and encourage collaborative strategies for preserving and providing access to the accumulated human record.

For more information on The Commission on Preservation and Access and its publications
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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

SUMMERTIME GOOD NEWS EDITION

NUMBER 59

AUGUST 1993

Once again, the August Newsletter brings summertime good news. This year, it's progress in international cooperation and the promise of telecommunications technologies.

BELLAGIO CONFERENCE RECOMMENDS ESTABLISHMENT OF EUROPEAN COMMISSION

At the recent Commission conference on Preserving the Literary Heritage, held at the Rockefeller Foundation's Study and Conference Center in Bellagio, Italy, scholars from Western Europe and the United States explored the development of new scholarly linkages in fields that depend heavily on deteriorating literature printed on acid paper.

The June 7-11 conference addressed three main objectives: 1) to increase awareness and concern about the problem among American and European scholars; 2) to encourage a European-centered effort that can effectively collaborate with scholars and libraries in the United States; and 3) to enlarge and solidify scholarly connections between Europe and the United States.

Recommendations unanimously adopted by the 23 conferees included decisive steps toward establishing a European commission on preservation and access. Three individuals were elected by the European participants to comprise an ad hoc steering committee that will supervise the process of constituting the new commission. These individuals are Professor Pieter J.D. Drenth (The Netherlands), Professor Michel Jouve (France), and Professor Geoffrey Martin (United Kingdom), with Alison de Puymège (Switzerland) serving as facilitator. They are charged with selecting three additional members.

It is anticipated that the European commission will seek endorsement and initial financial support as an independent body from a wide range of existing European cultural institutions. The conferees also recommended that the American commission be represented on the new board. European participants at Bellagio will submit to the steering committee nominations for the new commission board, not to exceed fifteen members. Once a board has been selected, it will meet to decide both how best to proceed with the formal and legal establishment of the European commission and how to conduct its own business in the future.

Attendees agreed that recommendations and momentum that resulted from the conference would help involve a wide range of colleagues, and help secure collaboration between the two continents in the work of preservation.

AAU PRESIDENT JOINS COMMISSION BOARD

Dr. Cornelius John Pings has accepted an invitation to join the Commission board and will be officially welcomed at the annual meeting October 29, 1993.

Pings became President of the Association of American Universities (AAU) on February 15, 1993, after serving as Provost and Senior Vice President for Academic Affairs at the University of Southern California (USC) since 1981.

He has provided leadership in such roles as Chairman of the Public Policy Committee (COSEPUP), a joint committee of the National Academies of Sciences and Engineering and the Institute of Medicine from 1988 to 1992. He has also served as a member and the Director of the National Commission on Research, and as President of the Association of Graduate Schools.

While at USC, he was responsible for the academic and research programs in all of the schools and colleges, the hospitals, the libraries, student affairs, admissions and financial aid, as well as community and governmental relations, and was awarded the university's highest honor, the Presidential Medallion, on March 9, 1993. Dr. Pings holds a B.S. degree in Applied Chemistry, and a Ph.D. degree in Chemical Engineering from the California Institute of Technology.

INSIDE

See page 3 for information concerning the new 32-page Commission publication, *The Evolving National Information Network: Background and Challenges*. This report of the Technical Assessment Advisory Committee (TAAC) discusses the new telecommunications environment and its implications for preservation and access.

FROM THE COMMISSION BOARD...

RESEARCH COLLECTIONS IN THE 21ST CENTURY

In this column, Millicent D. Abell, University Librarian, Yale University, considers the use of research collections in an environment of changing technologies. Abell's comments are drawn from her presentation at the 11th International Seminar, Kanazawa Institute of Technology, Kanazawa, Japan, in June 1992.

Given that no one library can possibly acquire, catalog, and preserve all the publications of potential interest to its constituency, it is imperative that librarians pursue their mission in a broadly collaborative way. The creation of collections, and the physical and intellectual systems of access that make them useful, require that we collaborate with at least three groups of participants in the scholarly information scene. The first group is scholars. We need to work closely with them not only to know and anticipate their research and teaching interests, but also to learn how they work to create and disseminate knowledge. The second group is publishers. We are so intimately linked with them in systems of collection and access that we together must find ways of reforming the systems of distribution of publications. The third group is ourselves. Librarians have a long and proud record of working together to improve the lot of scholars at large. Now, more than ever before, we must find ways to combine and leverage our local resources, talents, and funding to serve effectively our immediate communities and the international community of scholars and citizens who depend on our vision and energy to secure research collections for current and future generations.

An issue on which librarians must take the lead is to assure that archival collections of publications exist somewhere in safe and accessible formats with finding aids readily available to potential users. A related notion is the conception of a collection as constantly in flux. Whereas we have long thought of the clay tablet or the book as a semipermanent object and more recently the microform as the semipermanent substitute for the book, we must now consider whether "permanent" electronic storage, subject to constant recopying as access tools change, is the most cost-effective means of archiving collections. This conception has profound implications for the mix of resource investments in space, staff, and technology in libraries. The temptation to sketch a scenario for research library collections in the early 21st century is irresistible. Research libraries, which gather materials worldwide, will continue to acquire great quantities of printed material. Some will be copied electronically, depending on a judgement of the most cost-effective means of making it available to scholars, the provisions of cooperative agreements for sharing the material with other libraries and scholars, and the library's obligations for its preservation. Research libraries will house sizeable collections of retrospective material in digitized formats which will be available online or copied in a format of choice for another institution or individual scholar.

> ***we must now consider whether "permanent" electronic storage, subject to constant recopying as access tools change, is the most cost-effective means of archiving collections.***

Libraries will be responsible for assuring effective intellectual and physical access systems. Research libraries will individually or consortially bear responsibility for the physical maintenance and continuing access to older electronic journal files which the publishers no longer wish to maintain. Eventually in some narrowly defined fields, enough technical development and textual conversion of 20th century material will occur to make a "collection" available through electronic systems and deliverable to the scholar's workstation.

Much hard work lies ahead of us. We need to learn more about how the scholar learns. We need to conceive and test various economic and technical models for the functioning of the scholarly communication system. We need to persuade ourselves and each other to risk investment in collaborative ventures to advance scholarly communication. We need to protect our cultural records.

The forces affecting scholars' abilities to consume and produce knowledge cannot be met by libraries acting independently. We have no choice but to extend our dependence on informal decentralized systems of responsibility for the stewardship of our intellectual patrimony. We must nurture the efforts of all nations to protect their own legacy, and we must share among the great and small libraries of the world the responsibility for gathering and protecting the literature, records of science, documentation of local history, popular culture, and international diplomacy which comprise the body of our accumulated experience.

New technological tools and opportunities for collaboration provide us with desperately needed means for connecting our past with our future. With sufficient vision, will, and effort we will effect that connection.

Millicent D Abell

Millicent D. Abell

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The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialist and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor
Sonny Koerner - Managing Editor

TASK FORCE TO PURSUE MICROFILM AUDIT

Nearly 30 persons, including managers of university and consortial microfilming projects, microfilming vendors, developers of guidelines, and staff of the National Endowment for the Humanities (NEH), recently took part in a discussion of the procedures and results of a pilot survey of the technical quality of master negatives. The Commission brought together individuals responsible for large preservation microfilming projects at an invitational meeting June 25, prior to the annual conference of the American Library Association in New Orleans.

The brittle books program anticipates that some three million volumes will be reformatted over a twenty-year period. In the first five years, the program has supported the filming of over 550,000 volumes by 62 institutions.

The pilot survey under discussion was conducted to help develop benchmarks and inspection procedures for the periodic audit of the quality of first- and third-generation microfilm produced under the brittle books program of the NEH Division of Preservation and Access. (See the March 1993 Newsletter for more information.) The brittle books program anticipates that some three million volumes will be reformatted over a twenty-year period. In the first five years, the program has supported the filming of over 550,000 volumes by 62 institutions.

The survey was conducted by MSTC, Fairfax, VA., an independent firm that provides assessments of microfilm quality to government and corporate customers. Whitney Minkler, vice-president of MSTC, reported at the June meeting that inspected masters did not show signs of deterioration, and all the inspected film was readable and had not lost data.

He also noted that one-third of the film did not resolve to established ANSI resolution standards, and background density seemed to vary from reel to reel. This variation might be due to the condition of the materials being filmed, but it also might be the result of incorrect camera or processing settings. Participants explored with Minkler how preservation microfilming needs and guidelines relate to commercial service bureau filming for governmental and legal purposes.

The study concluded that even though inspected masters and duplicates have captured the data and show no immediate deterioration, libraries do not always receive all the preservation microfilming service that they have paid for, and that they should require vendors to meet standards cited in contracts. Additional training for university project managers was recommended.

The pilot project produced a set of archival microfilm inspection forms that could be used as the benchmark for future biennial inspections of masters. MSTC also suggested changes in procedures that might lower costs and increase quality in future years.

The preservation departments of the libraries at Ohio State, Yale, and Harvard Universities contributed to the study by providing approximately 1% of the master and printing negatives they have filmed under the NEH brittle books program. Following up on the interest at the meeting, the Commission will convene a task force to pursue the next steps in this effort.

COMMISSION RELEASES REPORT ON TELECOMMUNICATIONS AND PRESERVATION

The Evolving National Information Network: Background and Challenges, a report of the Technology Assessment Advisory Committee (TAAC) to the Commission, completes a cycle of reports on technological developments, trends and issues pertaining to the preservation copies of print, film, analog non-print and digital materials.

This 32-page study by Douglas E. Van Houweling, Vice Provost for Information Technology, and Michael J. McGill, Director, Network Systems, both at the University of Michigan, focuses on one aspect of an essential objective of the Commission, namely, ready and universal access to the materials that are being preserved for posterity and for which the originals are rapidly becoming inaccessible. Prior reports focused on the changing technologies, options and interrelationships of preservation, namely micrographics and digital imaging and storage.

The study provides scenarios of possible futures employing the interlocking technologies of communications, processing power and storage

The new report discusses the rapidly developing regional, national and global digital highways that reflect the changing combination of communications and processing technologies. New telecommunications technologies are providing remote access to digitally stored materials and promise to provide relatively universal, convenient, cost-effective and prompt access on a scale previously unrealizable. These changes also will have a profound impact on the electronic surrogates of print and film materials, including preservation copy. Indeed, if appropriate mechanisms and collaborative efforts are established, preservation surrogates of materials will be more readily and universally accessible than either print originals or microform copies.

To provide a foundation of understanding, the report first offers a primer on the technology underlying the current network environment. It then describes the status of the higher education and research networking environment, provides a summary of some of the lessons that we have learned from experience with these networks, and suggests impacts of this technology on the issues of knowledge preservation and access. The study provides scenarios of possible futures employing the interlocking technologies of communications, processing power and storage, and addresses the prospects and challenges of further development of the network and its use. It concludes with an outline of the policy issues we face. From the onset, the authors were aware that the report provides only a snapshot of this rapidly changing environment, and that the background and attempted prognostications will soon be obsolete and supplanted by future reality.

The report is available while supplies last for $15.00. Complimentary copies have been mailed to those on the Commission's mailing list. To order additional copies contact Sonny Koerner at the Commission.

> ***If writing is inscribed on parchment it will last for a thousand years. But if on paper, how long will it last? Two hundred years would be a lot.***
>
> — Trithemius, Abbot of Sponheim, 14th century

NEW REPORT ON STATES' CARE OF HISTORICAL RECORDS

The first major survey in 30 years of how well states are saving their historical records cites evidence of considerable growth and progress despite budget cutting pressures in the 1990's. In 1993 every state government has a functioning archival program and every state but one has a functioning state historical records advisory board.

The report, recently released by the Council of State Historical Records Coordinators, is entitled *Recognizing Leadership and Partnership. A Report on the Condition of Historical Records in the States and Efforts to Ensure Their Preservation and Use.* Written by Victoria Irons Walch, the report describes itself as the first attempt "to try to obtain a nationwide overview of state archival and records management programs" since Ernst Posner's survey in 1963 for his ground-breaking study, American State Archives.

Progress is reported in dealing with records created by new technologies. Twelve states have records schedules covering electronic records, five state archives have established separate staff positions for electronic records programs, and 29 states have developed guidelines for use of optical imaging technologies.

The report shows that nearly every state archival program has recently suffered budget reductions, while demands have increased. In the past six years, the volume of paper records in state archives rose fifty-seven percent; the volume of microfilm holdings more than tripled; and computer tapes in archival custody rose tenfold.

Copies are available from: Gordon O. Hendrickson, Chair, Council of State Historical Records Coordinators, State Historical Society of Iowa, 600 East Locust, Des Moines, Iowa, 50309.

— Adapted from Press Release from the National Historical Publications and Records Commission

ORDER FORM AVAILABLE

An updated version of the Commission's publication order form is now available. It includes the new publication *The Evolving National Information Network: Background and Challenges,* as well as previously published newsletter inserts. For a copy of the order form, write to the attention of Sonny Koerner at the Commission, or call (202) 939-3400.

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ISSN 1045-1919

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Newsletter

NUMBER 60 SEPTEMBER 1993

Originals from the Howard T. Curtiss papers, scanned as part of the digital preservation consortium project at Penn State.

PENN STATE COMPLETES SCANNING IN DIGITAL PROJECT

Pennsylvania State University reports that over 14,500 pages, including all of the Steel Workers' Organizing Committee papers, have been scanned and stored on optical disk as part of an 18-month contract with the Commission to explore the potential of digital image technology as a preservation and access medium for archival collections. The project is one of a number of research and development efforts of the Commission's digital preservation consortium.

The project began in October 1992 with the arrival and installation of scanning equipment and software. Initial stages were spent experimenting with settings of various scanning parameters. Meetings were held with library archivists to determine image resolution and indexing requirements for each of the archival collections scheduled to be scanned, and a workform was created to record bibliographic information (indexing data) for each primary document. Technicians participated in an orientation that included a discussion on the care and handling of brittle library materials, the special needs of archival collections, and a showing of the video "Slow Fires." By December 1992, the project moved into full swing.

In February, two work shifts were imposed to gain maximum scanning time, and scanning rate increased by nearly three-fold to a range of 50-70 pages an hour. The editing of scanned images was held to a minimum to reduce rescanning time, and trial and error resulted in a marked improvement in image capture quality and a dramatic decrease in scanning errors. Over the last several months, numerous demonstrations of the scanning operation have been given to various library committees and departments. Business Service personnel at the library also have showcased the scanning operation and have scheduled demonstrations for various groups.

A more complete description of this project is available from the Commission.

PUBLISHERS JOIN COMMISSION SPONSORS

The Times Mirror and John Wiley & Sons, Inc., have become sponsors of the Commission for a three-year period.Both publishers are members of the Association of American Publishers, of which Commission board member Nicholas Veliotes is president. In a letter to chairman Billy E. Frye, Wiley's President and Chief Executive Officer, Charles R. Ellis, noted "we will be pleased to sponsor the Commission ... and strongly support the work you are doing." Patrick A. Clifford, Group Vice President for Times Mirror, wrote, "Best of luck in restoring and microfilming the deteriorating books in our libraries as well as all the other specific and noble activities which this foundation supports."

SECOND SCIENCE WORKSHOP TO DEVELOP INITIAL PROJECTS

Directory of Research on Non-Print Media Underway

As part of a broad science research initiative, the participants of a 1992 science research workshop are being reconvened this month at a second workshop at the Belmont Conference Center, MD. The two-day workshop, jointly supported by the home institutions of the preservation administrators and the Commission, will advance the planning of three to four projects addressing the current, most important and critical needs of the preservation field. The primary objective of the first workshop was to establish productive links between the consumers of applied science in library and archives preservation with the producers of basic scientific research.

The workshop agenda again will use teams of preservation administrators with science advisors, operating with consensus decision-making, to develop the three to four research projects. The projects are expected to have a broad impact on advancing the national preservation effort, and will be identified within the larger context of a long-range, useful research agenda for the 1990s.

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The workshop also is addressing needs related to education, institutional involvement, financial support, and information and publications. Under consideration are:

- An ongoing mechanism to keep preservation administrators abreast of research results, to understand its implications, and to apply it to everyday practical problems.
- Assistance in how best to articulate and communicate the research needs of institutions, since preservation administrators are often in the position of purchasing research from scientists.
- Facilitation of the collaboration of interested institutions to design and fund needed research.
- Expansion of the Commission's efforts to identify and publicize the existence of new research in areas of interest.

In a related effort, the Commission has contracted with Dr. Margaret Child to prepare a directory of information sources on scientific research related to the preservation of sound recording, still and moving images, and magnetic tape, areas that have been identified as important for scientific research. Librarians and archivists concerned about the preservation of the documentary record have begun to recognize that far more than our paper-based heritage is threatened by deterioration. All these "other" media have their own specific and idiosyncratic physical and chemical characteristics.

There are at least two major applications for scientific inquiry: First, regarding storage of large collections of these materials, how to prolong the life of the original information carriers and minimize wear and tear caused by use of the information;, and second, as it becomes necessary, how to manage the migration or transfer of the information to an improved version of the original medium or to another medium. The new directory will include basic information on the principal public sector or non-profit institutions, organizations and publications concerned directly or indirectly with research on the preservation of non-paper-based media. The October newsletter will provide information on the availability of this directory.

SCIENTIFIC RESEARCH YIELDS MANAGEMENT TOOL FOR STORAGE OF ACETATE FILM

The Image Permanence Institute (IPI) at Rochester Institute of Technology, NY, has published a *Storage Guide for Acetate Film* — a tool for those involved in the planning and evaluation of storage environments for acetate base photographic film, cinema film and microfilm. The guide was developed to help collection and preservation managers in museums, libraries and archives understand the way in which temperature and humidity (RH) in the storage environment can significantly increase or decrease the useful life of the film in their collections.

The guide represents five years of research on the deterioration of plastic film supports funded by the Division of Preservation and Access of the National Endowment for the Humanities, the National Historical Publications and Records Commission, and Eastman Kodak Company. The IPI study focused on how temperature and RH in the storage environment relate to the slow chemical deterioration of acetate film (the so-called "vinegar syndrome"). Using the resulting test data, IPI created the four-part publication to help institutions anticipate the effect of various temperature/RH conditions on their film collections and make improvements. The guide includes a 24-page booklet, a double-sided time/temperature/RH wheel, time contour graphs and a "time out of storage" table.

The *IPI Storage Guide for Acetate Film* costs $25.00, plus $2.00 shipping and handling. For information or orders contact Rochester Institute of Technology, Image Permanence Institute, 70 Lomb Memorial Drive, Rochester, New York 14623-5604.

—Adapted from IPI Press Release

SECOND PRESERVATION MANAGEMENT SEMINAR IS INTENSE & HELPFUL

Evaluations from the 21 participants of the second Preservation Management Seminar for College Librarians, held on the Wellesley College campus July 22-30, 1993, describe an event that was intense in its activities and instruction, and that provided them with needed information, personal contacts, and guidance to help establish and strengthen college preservation programs. The following report is from Lisa Fox, dean of the faculty for the event, which was sponsored by SOLINET, Inc., and co-sponsored by the Commission:

QUOTES FROM PARTICIPANTS

"I especially appreciated the diversity of the participants — each contributing something a little unique."

"The intense nature of curriculum was analogous to a college course and enabled us to focus better on the subject matter."

"I received all the information I could absorb, a clear vision of where I need to start, and some very good access to people I may need to contact."

"I received a very solid overview of the problems connected with the implementation of a preservation program, and now believe I have the information to begin an action plan."

"I now have a more global understanding and appreciation of the subject and feel that by beginning to implement small changes, I can ultimately end up with written policies and a managed preservation environment. Well worth the tuition!"

The seminar included 69 hours of lecture, structured discussions, and small-group work sessions. Many participants could still be found sharing their experiences and discussing the issues after the sessions concluded at 9 each evening. Prior to the seminar, each student was responsible for completing an extensive set of background readings and homework assignments. Hearkening back to a comment from a 1991 seminar graduate, the group dubbed the event "Preservation Boot Camp II," and concurred that this "total immersion" training strategy had yielded extraordinary results.

The curriculum addressed each major programmatic area within preservation, and participants developed several documents for use in their libraries. The faculty focused on helping the students gain a deeper technical understanding of preservation, build judgement and problem-solving skills, and develop realistic priorities and plans for managing preservation as a decentralized program.

At Wellesley College, participants were able to observe first-hand the benefits of a successful stack maintenance program, collections conservation, disaster preparedness, and other features of an integrated college library preservation program.

The Preservation Management Seminar was developed during 1990-91 by the Commission's College Libraries Committee and SOLINET, with funding assistance from the William and Flora Hewlett Foundation, and was offered first in JuLy 1991 at Washington & Lee University. This year the College Libraries Committee helped to refine the program and chose participants on a competitive application process. Students came from twelve states and the District of Columbia, with four from outside the U.S. Two participants from Central America had met with Hans Rütimann as part of the Commission's International Project, which led to their interest in receiving this management-focused training. The group represented the full range of library functions: public and technical services, government documents, collection development, and special collections.

The faculty was named as a key to the event's strength by 14 of the 21 participants. In addition to Fox, faculty members were Carol Eyler, Head of Technical Services & Systems, Mercer University; Jane Hedberg, Serials Librarian and Preservation Administrator, Wellesley College; Carolyn Clark Morrow, Malloy-Rabinowitz Preservation Librarian, Harvard University; and Karen Motylewski, Field Service Director, Northeast Document Conservation Center. Guest presentations were also made by Nancy Schrock and staff in the Harvard Preservation Office. Fox, who headed the planning effort for the 1991 and '93 seminars, is working to identify organizations that might host the seminar in the future. Interested organizations can contact her at 404-627-2855 or by Internet at lfox@mail.solinet.net.

ISO APPROVES INTERNATIONAL PAPER STANDARD

The ISO Central Secretariat confirmed this past July the approval of an international standard for permanent paper (ISO/DIS 9706). According to Rolf Dahlø, chairman of the ISO-committee for Physical Keeping of Documents responsible for the international permanent paper standard, ISO/DIS 9706 was approved in accordance with the ISO/TEC directives, and will be turned over to the committee for editing and preparation for print.

COLUMBIA RECEIVES GRANT FOR MASS DEACIDIFICATION PILOT TEST

The New York State Program for the Conservation and Preservation of Library Research Materials has given Columbia University a grant of $10,877 to conduct a pilot test run of the Akzo Chemicals DEZ mass deacidification process over the next eight months. New York University and the State University of New York at Stony Brook will cooperate in the project. Each library will select approximately 130 volumes to be treated. After treatment, the pH levels in the paper will be tested and compared with pH levels before treatment, to evaluate the completeness of the process.

Volumes selected for the pilot test will be from the general collections and will consist of items needing commercial rebinding, which eliminates concern about potential damage to the covers and adhesives. The results of the pilot will be disseminated to the eleven New York State Comprehensive Research Libraries in time to plan for a potential full-scale mass deacidification project. Further information is available from Janet Gertz, Assistant Librarian, Preservation, Columbia University Libraries.

— Adapted from Columbia University Internet announcement

> ***I will be talking to a lot of people who have the humanities close to their heart.... I have a notion that we want to expand the participation of the public in the humanities.***
>
> — Sheldon Hackney, newly-confirmed chairman of the National Endowment for the Humanities, quoted in *The Washington Post*, August 4, 1993.

SUGGESTED READINGS

📖 *The Permanence and Care of Color Photographs: Traditional and Digital Color Prints, Color Negatives, Slides, and Motion Pictures* by Henry Wilhelm with contributing author Carol Brower covers the often controversial subject of preserving fading color photographic heritage. The book tells which color films and papers produced by major corporations are the best and worst in their class and presents detailed test results based on years of evaluating these products. Wilhelm supplies appropriate recommendations for the best ways of handling, mounting, framing, displaying, and storing color photographs and gives the predicted display lives (in years) of color print materials. The book addresses two opposing myths of color photography — that all color photographs are so impermanent that there is no way to save them, and that color materials today are so stable that their permanence need not be a concern. All major color processes marketed during the last 15 years are covered, along with current photographic materials and some of the newest digital color print systems. Available from Preservation Publishing Company, 719 State Street, P.O. Box 567, Grinnell, Iowa 50112.

📖 *The Reconfigured Eye — Visual Truth in the Post-Photographic Era*, a 272-page book by William J. Mitchell, Dean of the School of Architecture and Planning at the Michigan Institute of Technology (MIT), discusses how the increasingly widespread use of videotape footage in journalism, the courtroom, and other arenas suggests that the photographic image carries more credibility than ever before. The book takes a systematic, critical look at the digital imaging revolution, describes the technology and explores its aesthetic potential, ethical and legal implications, and ability to change how one thinks. Mitchell argues that digital imaging technologies will result in the demise of traditional film-based photography, and addresses how these new technologies are calling into question the objectivity and veracity associated with photographs. Available from MIT Press, 55 Hayward Street, Cambridge, Massachusetts 02142.

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ISSN 1045-1919

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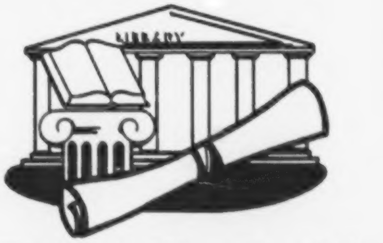
Newsletter

NUMBER 61

OCTOBER 1993

GRANTS TO SUPPORT ADVOCACY AND OUTREACH

The Commission has received two grants totalling $75,000 to help the expansion of its communications program, with a focus on advocacy and outreach initiatives. The grants will enable the Commission to increase involvement with a number of new groups that include library school educators; scholars; regional, state and local officials; and technologists, as well as scholarly constituencies in this country and abroad.



The H. W. Wilson Foundation announced a grant of $25,000 to be expended over an 18-month period in support of new education initiatives targeted to constituencies beyond the library and archives fields, as well as other communication efforts. The Foundation's initial grant in 1986 was instrumental in supporting activities during the Commission's early years, and this new funding will build on that investment.

The Gladys Krieble Delmas Foundation approved a grant of $50,000 to help expand newsletter distribution, exhibit services, and general media advocacy. With this funding the communications program will broaden the spectrum of its mailing list and produce materials to accompany exhibits at scholarly conferences, seminars, and special events. To help launch these efforts, the Commission will develop educational brochures and fact sheets.

COMMISSION TO RELEASE NEW DIRECTORY AND ANNUAL REPORT

The Commission's *1992-1993 Annual Report* and a new publication entitled *Directory of Information Sources on Scientific Research Related to the Preservation of Sound Recordings, Still and Moving Images and Magnetic Tape*, are scheduled for release this month. Both will be distributed to Commission sponsors and mailing lists upon their completion.

The Directory is a comprehensive listing of laboratories and organizations as well as sources of information dealing with the preservation of and access to nonprint media. This 16-page publication highlights the initiatives, programs, and contact information of over 35 entries including databases, serials, monographs and articles, and conference proceedings.

Additional copies of both publications are available while supplies last. The Annual Reports is free, and the Directory is available for $10.00 prepaid. For further information contact Sonny Koerner at the Commission.

> ***Librarians need suffer no lack of confidence that they can negotiate the transition from the paper information age to the electronic information age.***
>
> —Jerry D. Campball, University Librarian and Vice Provost for computing at Duke University. Drawn from his remarks at the President's Program, ALA Midwinter Meeting, January 1993

PUBLISHERS CONTINUING SUPPORT FOR PRESERVATION AND ACCESS

The Reader's Digest Association, Inc., and HarperCollins Publishers have committed support to the Commission by becoming sponsors for a three-year period. Both are members of the Association of American Publishers, of which Commission board member Nicholas Veliotes is president. Sponsors now total 64 and include an array of public and private institutions, with the last four newcomers being from the publishing industry. All sponsors receive expedited mailings of publications, newsletters, and other information. The Commission's two preservation and access exhibits are made available to sponsors at no charge.

FROM THE COMMISSION BOARD...

GERMAN NATIONAL LIBRARY MOVES AHEAD WITH PRESERVATION

In this column, Klaus-Dieter Lehmann, General Director, Die Deutsche Bibliothek, discusses the collaboration between the German National Library, private industry, and the federal government to produce a state-of-the-art facility and procedure for the deacidification of the human record.

With the unification of Germany in October of 1990, the Deutsche Bücherei in Leipzig, eastern Germany, and the Deutsche Bibliothek in Frankfurt, western Germany, were merged to form the unified national library now known as Die Deutsche Bibliothek. While the two libraries remain at their original locations, tasks have been distributed between them, and each has developed its own particular areas of strength. One such very important area in Leipzig is the new and unique Zentrum für Bucher haltung (Center for Book Preservation and Conservation, CBPC). Aside from fulfilling the national library's legal mandate for the permanent preservation of German-language publications, the CBPC also serves as a center for applied research and development, training, continuing education and consultation.

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The Commission on Preservation and Access was established in 1986 to foster and support collaboration among libraries and allied organizations in order to ensure the preservation of the published and documentary record in all formats and to provide enhanced access to scholarly information.

The newsletter reports on cooperative national and international activities and is directed to university administrators, scholars, and faculty; preservation specialist and managers; and members of consortia, governmental bodies, and other groups sharing in the Commission's goals. The newsletter is not copyrighted. Its duplication is encouraged.

Patricia Battin - President
Maxine K. Sitts - Program Officer, Editor
Sonny Koerner - Managing Editor

Activities of the CBPC proceed from the basis of a comprehensive operating concept which takes into account both the criteria of quality and the requirements imposed upon a modern preservation and conservation program by the need to process massive volumes of material. In addition to the restoration of significant individual items by traditional means, other technologies such as paper-splitting and microfilming with high-resolution cameras have been introduced. With regard to the former, a fully mechanized version is to be put into operation in 1993. The new system is capable of processing ten times as much material per unit of time as manual splitting techniques and is thus well suited to the task of mass conservation.

In early 1994, the CBPC is to begin industrial-level mass deacidification of acidic paper for the first time, making it the first large-scale facility in the world that is owned by a library. The result of a cooperative effort with the Battelle Institute in Frankfurt which began in 1987, the facility initially will be able to deacidify and preserve for posterity some 200,000 volumes per year and eventually will expand its capacity to about 400,000 volumes annually. The plant was built at a cost of DM 6.5 million with funds provided by the Federal Ministry of Research and Technology. As described below, the thoroughly tested and refined process not only deacidifies but strengthens paper as well. The physical facility is a modular construction amendable to both expansion and reduction of capacity, depending upon customer requirements. A market introduction plan targeted to subsequent users is currently being drawn up by the developer.

Although the large-scale facility is presently a major focal point of interest, the process itself is an integral part of the total operating plan. Medium-term goals call for the augmentation of current preservation and conservation measures by securing data through conversion to digital media.

In the period since reunification, Die Deutsche Bibliothek has incorporated the essential aspects of preservation and conservation into an overall plan. In this way, it has provided an important innovation for the preservation of our cultural heritage in archives and libraries, lending at the same time support to political initiatives within Europe.

This description is adapted from "The self-destruction of modern papers," issued by Battelle and Die Deutsche Bibliothek

For the protection of library and archival collections in their original form, Die Deutsche Bibliothek is performing intensive work to develop cost effective new mass preservation techniques. The basic idea of mass deacidification is to subject books and archival documents to a chemical neutralization treatment and hence to render the acids in the paper innoxious. Because of environmental effects (air pollution) and endogenous processes, however, new acids will constantly form in the paper over time. An alkaline buffer is therefore added to neutralize those acids too.

Battelle researchers have been comparing and working on various paper conservation processes since 1987. The project, performed under contract from Die Deutsche Bibliothek, is aimed at developing to maturity the most suitable method. The first facility was put into operation in Frankfurt in 1990. The method used at that time was further improved for the current treatment facility. Design engineers have attributed greatest importance to environmental compatibility. To achieve a "clean" method they developed a new, harmless treating solution and made provisions for recirculating the chemicals and minimizing any residues. The closed circuit ensures that no solvent is released to the outside.

Battelle states that the chemicals are harmless to environment, non-toxic and compatible with all common materials used in books and archivals. The method ensures not only efficient neutralization of the acids in the paper, but also raises the pH value to the alkaline range around 9.0, according to Battelle.

The deacidification treatment comprises three stages: predrying, chemical neutralization, and post-drying. The predrying procedure, which may take up to two days with other methods, has been replaced by vacuum drying. The books are heated using microwave energy. The temperature of the paper is controlled to a maximum of 60°C so that the books and documents are not over-heated and possibly damaged. When predrying is over, the chamber is filled with the alkaline deacidifying solution. The books are completely impregnated within a few minutes. The treatment chamber is then emptied and the excess solution is pumped out. The solvent is evaporated from the books and recovered. The combination of vacuum drying and microwave drying has proved particularly efficient, according to engineers. The treatment is completed within less than two hours.

The efficacy of the new method was examined by exposing the treated papers to high temperatures and considerable air moisture. These ageing tests showed that the treated paper retains its strength practically unchanged for a very long time. This method makes it possible to strengthen the damaged paper while neutralizing the acid, according to Battelle. Depending on what kind of paper is treated, strength increases of up to 50 percent are feasible.

Klaus-Dieter Lehmann

THE BOOK IN THE ELECTRONIC AGE

Excerpts from: "Old Books Between The Shredder And Conservation," The Book Collector, Vol. 41, No. 4 (Winter 1992), by Dr. Franz Georg Kaltwasser, Director of the Bavarian State Library (Bayerische Staatsbibliothek), retired.

We are faced with a confusing situation. The end of the age of the book has been heralded since the 1960s. Old books have disappeared from view and become obsolete books. Yet, all of a sudden, various, contradictory fears are emerging: fear of the book mountains which have been growing in our libraries since those same 1960s, but also fear of the swift decay of many books which are now considered important. And, to cap it all, we have lately been thinking about the gaps which have always been present in our antiquarian collections and which are becoming more and more noticeable. Each of these focal points or fears has its own champion to present its case, with little regard for the others. What I find lacking is an overall view from scholars and librarians on the subject, that is, the book in the electronic age. I cannot offer a conclusive view myself, but I hope that my comments may help us to develop in future some sort of concept which will draw together the various aspects.

The Destruction of Books

It may be useful to remind ourselves that books as information carriers were always subject to natural and forcible destruction. Natural deterioration is largely dependent on the material used. Inscriptions on stone or clay are highly durable if kept in desert sand, in contrast to papyri which have only been preserved under the conditions most favorable to them, that is, in mummies. In comparison, medieval parchment codices in their wooden covers seem made for eternity. Machine-produced paper, on the other hand, bears the seeds of destruction within itself. To these internal dangers must be added the external ones which we all know: damp, heat, damage in transit, environmental pollution, vermin, fire, earthquakes and other devastating catastrophes. Use itself can damage books, if too careless or casual, at the reader's desk or the photocopier.

We should, however, realize that the dangers which threatened, and still threaten books and their intellectual content with destruction were probably less severe, and still are, than those which threaten the modern information society by means of new technology. Each technology has its specific disadvantages. We are fascinated by the advantages of electronic data processing. Its dangers must be recognized in time for us to enjoy its benefits. The printed and duplicated book has the advantage - however much the individual copy may be at risk - that on the whole, not all copies can be destroyed, so that thought, once published, cannot be totally suppressed. We can thank the book for that. However, we must be wary of the possibilities of being deprived of information by means of the new technologies.

This is not part of my theme, but I believe that, when we speak of the destruction and preservation of books, we must be aware that we are, at the same time, entering a further dimension of information provision, the development of which will clearly influence our relationship with the book. We have only to think what it would be like if libraries only sold information and were no longer able to keep it themselves, because data carriers - such as CD ROM disks - could only be hired. Libraries would then become a mere agency, intermediary 'bookshops'.

Preservation of Existing Books

In the Federal Republic of Germany, the Kommission für Bestandserhaltung (Commission for Collection Conservation) of the Deutsches Bibliotheksinstitut has prepared a statistical survey of damage. This shows that of about 152 million volumes in research libraries, 40 million volumes (or 26 percent) are already discolored and require urgent conservation treatment to strengthen the paper by deacidification, and that 18 million volumes (or 12 percent) are already so brittle that they can no longer be saved even by mass conservation processes.[1] The scale of damage is not only due to the acid content of the paper, but also to environmental conditions, i.e., climate in general and in particular in our storage depots, and also, of course, intensity of use.

We must ask ourselves what methods of preservation should be used. We must differentiate between preservation of the original and transfer to a secondary medium, e.g., film or an electronic medium. With older books, where the paper is not machine-produced, we will probably restore the original. Filming in this case is intended to protect the original from too intensive use and loss (e.g., through external loan). For books with acid-retaining paper of the nineteenth and twentieth centuries three methods of preservation are possible: mass deacidification, filming and, in future, probably machine-readable digitizing (full text storage).

Thankfully in Germany we have become aware of the seriousness of the problem - the will to act is there and, it is to be hoped, the political motivation. The first result of such action is the study carried out by the Batelle-Institut in Frankfurt am Main, on behalf of the Deutsche Bibliothek and with funds from the Bundesminister für Forschung und Technologie (Federal Minister for Research and Technology), on the mass preservation of archives and libraries.[2] This study examines existing procedures of mass deacidification and the resultant problems.

To keep our options open for the future it has been decided that disintegrating books should be stored on high-resolution black-and-white microfilm. This in itself guarantees a long life, but it can also form the basis of later digitalization for electronic storage. At the same time the production of microfiches for user purposes is no problem. The agony of choice is replaced by an open strategy, behind which lies the idea that old texts which need to be filmed due to paper decay can also be made available in the future for possible electronic information transmission.[3]

Conclusion

Common to all the deliberations mentioned is the fact that we would not have thought it possible a few years ago that we would be concerned with older books on the shelves of our libraries, with the content of the library - such things had in recent years faded into the background in the face of more fashionable problems. The points of view are very different. Some fear overloading, others bemoan the gaps, others see the decay of what is already there, and what is more, the seeds of destruction that already lie within the books waiting to be acquired. Some want to clear away what is superfluous, others want to fill the gaps, others want to preserve what is decaying. I said at the beginning that I did not intend to reduce these conflicting viewpoints to a common denominator; but we must look for such a common denomination. We must clarify if possible to what extent books are decaying and which are to be saved, if indeed they cannot all be saved. Finally we must take note of the all-important role of the great research libraries which are crucial to the survival of our culture.

Notes

1) Ulla Usemann-Keller, 'Bestandsschäden in deutschen Bibliotheken, Untersuchung von 0.01 Prozent der Bestände ausgewählter Bibliotheken der Bundesrepublik durch das Deutsche Bibliotheksinstitut', *ZfBB 36* (1989), pp. 109-23.

2) *Massenkonserviergung für Archive und Bibliotheken*...Hrsg. von Kurt Nowak (Frankfurt/Main, 1989) (*ZfBB*, Sonderheft 49).

3) Henry W. Riecken, 'The agony of choice. Strategies for preservation and scholarship'. In : The Commission on Preservation and Access. *Annual Report* (1 July 1990 - 30 June 1991), pp. 7-13.

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ISSN 1045-1919

The Commission on Preservation and Access

Providing Access To The Accumulated Human Record As Far Into The Future As Possible

Newsletter

Number 62

Nov. – Dec. 1993

SEARCH FOR PRESIDENT UNDERWAY, BATTIN ANNOUNCES RETIREMENT

The Commission board is actively seeking a new president upon the retirement of Patricia Battin, who has announced that she will leave that post on June 30, 1994. Board chair Billy E. Frye has appointed a committee that is searching for a leader "who can move forward with a full and active national and global agenda addressing the preservation of and access to scholarly resources." According to a recent announcement from Frye, the board fully endorses current programs and expects them to be continued.

The Board is requesting nominations for the position, and a description is available from search committee members: Millicent D. Abell, University Librarian, Yale University, Box 1603A Yale Station, New Haven, CT 06520; Sidney Verba, Director, Harvard University Library, Wadsworth House, 1341 Massachusetts Avenue, Cambridge, MA 02138; Deanna Marcum, Director of Public Service & Collections Management I, Library of Congress, LM-642, Washington, DC 20540.

MACMILLAN, PARAMOUNT JOIN COMMISSION SPONSORS

The Macmillan Foundation and Paramount Publishers recently added their support to the Commission by becoming sponsors for the next three years. Sponsors now total 66, with this latest addition representative of the commitment of the publishing industry to the preservation of and access to the human record. Sponsors receive expedited mailings of publications, newsletters, and other information, as well as complimentary use of the Commission's exhibits.

NEW MELLON GRANT TO SUPPORT INTERNATIONAL PROGRAM

The Andrew W. Mellon Foundation has approved an $800,000 grant to the Commission for the operation of the International Program over the next three years. The appropriation will enable the Commission to maintain a strong, flexible capability for responding to preservation initiatives in Eastern and Western Europe, Latin America and other parts of the globe.

The International Program was developed in 1989 with an initial Mellon grant. Its major objectives are to encourage and strengthen active preservation programs and to help develop new programs in countries with minimal or no preservation activities. In its work, the International Program encourages cooperation among nations to eliminate redundancy and maximize use of financial resources, and the use of compatible formats to help assure worldwide bibliographic access to preservation records.

NATIONAL LIBRARY OF POLAND TO BEGIN MICROFORM CONVERSION PROJECT

The Commission has contracted with the National Library of Poland to convert to machine-readable form the register of microforms held by Polish libraries. The project will speed up the input of data on collections of Poland's libraries to the databases and make access to them easier, while helping to facilitate access to important and valuable materials for scholars of both Europe and America.

The three-year project is scheduled to begin on January 1, 1994. It is supported by the Andrew W. Mellon Foundation.

The converted records — bibliographic citations of microforms available in Polish libraries — will become an integral part of the automated catalog of the Polish National Library. All information converted to machine-readable form under this project will be made available to the U.S. library and scholarly communities in a U.S.-compatible format.

This contract is viewed as a way to begin involving countries outside the European Community in the International Program initiative to make preservation records widely available.

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REPORT ON INTERNATIONAL SCHOLARS CONFERENCE

Preserving The Intellectual Heritage, a report on the recent international conference organized by the Commission and supported by the Rockefeller and Andrew W. Mellon Foundations, provides the recommendations and outcomes of the week-long meeting. The June 7-11, 1993 conference, held at the Rockefeller Foundation's Study and Conference Center in Bellagio, Italy, consisted of 23 scholars from 11 western European countries and the United States who explored the development of new scholarly linkages in fields that depend heavily on deteriorating literature printed on acid paper.

The papers and informal comments by conference participants are paraphrased or summarized at appropriate points in the report. Conferees recognized the importance of raising the level of awareness about decaying books among scholars, librarians, university officers, cultural ministers, publishers, private foundations, professional societies and parliaments, without taking a position on which methods of preservation are preferred. However, it was agreed that it is important not to delay preserving materials until a particular method has been proved optimal. Instead, the most flexible, dependable and economical methods are suggested to be used at once. The report details how discussions of strategies for enhancing both inter-European and transatlantic cooperation led to a unanimous vote to create a European commission on preservation and access.

Preserving The Intellectual Heritage is available while supplies last for $10.00. Prepayment in U.S. funds is required. For further information contact Sonny Koerner at the Commission.

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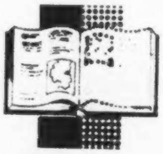

PILOT PROJECT TO COLLECT INFORMATION ON CENTRAL COLLECTION

The Commission convened an initial meeting of representatives from Harvard, Yale, Columbia and New York Public Libraries, the Online Computer Library Center (OCLC), and Iron Mountain in August 1993 to develop a pilot project for a central distribution service for print masters of preservation microfilms. The project will collect cost, logistics and feasibility information for the operation of such a service.

Representatives have developed pilot project procedures for retrospectively standardizing the necessary retrieval information in the bibliographic record, for transferring that information to Iron Mountain via OCLC, and for shipping the films to Iron Mountain. Eventually, procedures for prospective records management will be recommended to the National Endowment for the Humanities (NEH) for inclusion in their guidelines.

Although the pilot will begin with library-mediated service, the objective is to make access available directly to the end-user.

SCIENCE RESEARCH INITIATIVE SETS PRIORITIES

The group of 16 preservation administrators and four scientists convened by the Commission within the Preservation Science Research Initiative has reached agreement on a first set of six priority projects to support library and archives in their efforts to extend the useful life of large research collections. The considerable consensus in defining this initial set of projects indicates significant progress toward a long-term science research initiative that will specifically address the needs of preservation administrators.

The first six research projects identified for development focus on the chemical deterioration of specific materials in large collections and address pressing materials science questions that relate to the environmental conditions and storage of collections of paper, film, and magnetic media. Requests for proposals (RFPs) are now being developed by the group, operating under the name of the Preservation Science Council. All RFPs call for the production of one or more management tools designed to be useful to preservation administrators for decision-making and cost-benefit analysis. RFPs will be made public over the next 18 months as they are completed, with the first expected within six months. The projects involve research on:

Paper: Lignin. Assess the influences of lignin in a paper on its permanence, including such factors as color changes upon aging and possible deleterious effects upon non-lignin papers coming into contact with lignin-containing papers.

Paper and Book Collections: Evaluate the role of the moisture reservoir in paper and book collections under fluctuating RH and temperature conditions. Tests to include a broad range of materials and micro- and macro-environment storage conditions.

Paper: Temperature and RH Dependence of Deterioration. Use of accelerated aging experiments to yield more absolute predictions concerning the life expectancy under different temperature and RH conditions of five types of paper found most commonly in libraries and archives.

Magnetic Media. Phase I: Review the status of current research on the longevity and durability of magnetic media, identify tools useful to librarians and archivists in managing these collections, and identify the research necessary to develop the tools, leading to Phase II.

Film. Research to yield recommendations for the types of storage enclosures that are best for microfilm, movie film, and sheet film, so as to minimize acetate base degradation.

Binding Adhesives. Design a laboratory process to accelerate the natural aging process of polyvinyl acetate adhesive (PVA) films and to test the relative performance of several widely used PVA formulations.

The science research group first met in September 1992 at a 2 1/2-day workshop hosted by the Commission, followed by a one-day planning meeting in February 1993. The current stage of work culminated with a second 2 1/2-day workshop at the Belmont Conference Center in Elkridge, MD in September 1993. The initiative is supported with funds from the William and Flora Hewlett Foundation.

Consensus on the projects came about through group discussions, prioritization exercises, and questionnaires, with the following criteria:

- immediacy of the problem.
- extent of impact and significance on institutions and materials (numbers affected).
- ease and ability to translate research results into practice.
- cost in time and dollars of implementing results in institutions.
- scientific validity of research design and results.
- extent to which project enhances and helps other research completed or underway.

DIGITAL PRESERVATION CONSORTIUM PROJECTS MOVE AHEAD

USC TO PRESERVE CALIFORNIA HISTORIC SOCIETY COLLECTION

The University of Southern California (USC) libraries have established a steering committee and identified several key issues in the first phase of an Image Preservation and Access Project. Operating under a contract with the Commission, USC is developing an implementation plan for a combined preservation and delivery system for its *California Historic Society Collection.*

Many elements affect the design decisions made in implementing an integrated system for archiving, retrieving, and delivering digital images in a network environment. The committee has identified several key issues that affect the overall planning of the project including: quality and size of the Imagebase; mass storage model; accessibility and architecture; hierarchical image decomposition; user interface; and project planning.

The collection contains about 23,000 images that document development of the Los Angeles region from 1860 to 1960. Subject content of this collection is extensive and varied, ranging from ground transportation systems, aviation and shipping, street and city views, to whole collections of regional photographs by prominent local photographers.

Currently, the library is completing a three-year project to catalog the entire collection in USMARC format with textual description of all the items held within that collection. The database is accessible in a local area network, and USC libraries and the computing center are in the process of importing the database to a Unix environment and providing it over the Internet as a part of the USCinfo system. This would allow image delivery via the campus network to both library public access workstations as well as to end-user remote access workstations. USC libraries and computing services are fully committed to the development of a wide area network image delivery system for the purposes of preservation, research, and access.

UTK SCANNING THE GALSTON-BUSONI COLLECTIONS

The University of Tennessee at Knoxville (UTK) libraries, in another Digital Preservation Consortium project, has scanned some 2,038 pages of the Galston-Busoni collections and formed a complete paper file of all scans organized according to the Bayne guide to the archives. The file is in the form of Docutech printouts that serve as a mechanism for quality control and, as accumulated, provide an important resource for access to the materials while preserving the originals until all is available online in a network environment.

Operating under contract to the Commission, the UTK project is exploring the potential of digitized page images as a long-term preservation technique for both text and graphics and experimenting with the access to and management of that collection. The Galston-Busoni collections consist of scholarly materials relating to late 19th- and 20th-century music and musical composition and performance, and contains some 1,500 scores for piano, 102 miniature scores, and 31 books. This collection was chosen for the wide variety of formats and types of materials, allowing for a thorough test of the capabilities of imaging technology.

UTK set goals for the project based on routine production, but the challenge of new technology hindered progress in three ways: 1) the kinds of materials contained in the Galston-Busoni archives presented challenges to scanner operators due to formats and conditions, and multiple types of images demanded trial-and-error testing; 2) specified "half-time" operation demanded that the scanning process be done from top priorities down; and 3) preservation scanning means the best quality that can be obtained. If it is assumed that the original is no more — as will one day be the case — what must be left to posterity is the very best image that the technology of 1993 can produce.

Despite problems, the project has completed the scanning of largely hand-written correspondence and other personal and business communications, as well as photographs, postcards, performance programs, performance reviews from contemporary newspapers and periodicals, the handwritten manuscript scores, and some published music contained within the collection.

ARL PUBLISHES STATISTICS, COMMENDS NEH PRESERVATION PROGRAM

The 1991-92 *ARL Preservation Statistics* report, published by the Association of Research Libraries (ARL), offers evidence of the continuing growth in preservation expenditures, staffing, and activities. The report highlights progress over the last five years of a National Endowment for the Humanities (NEH) cooperative preservation microfilming program that has stimulated a 72 percent increase in preservation microfilming activities in ARL libraries since the program started, and documents the development of staff increases. In 1991-92, some 95 institutions reported having preservation administrators, a 20 percent increase over those institutions reporting in 1987-88.

The statistics report is available by prepaid order to ARL institutions for $20 and to non-members and individuals for $60. Contact ARL, Publications Department, Dept. #0692, Washington, DC 20073-0692.

"NEW TECHNOLOGIES, NEW ACCESS, NEW RISKS"

The Commission's modular exhibit now offers two photo-display options. A new set of center photograph panels depicts the transitional nature of both the brittle book and the preservation technology used to capture information, with the overlying message of **"New Technologies, New Access, New Risks"**.

This option complements the existing center photograph panels that depict a brittle page of a book. Borrowing institutions may choose either set of panels. In either case, the photo is framed by four blank felt panels to display messages, signs, or photographs targeted to any specific audience.

The exhibit will continue to travel to higher education institutions and a number of scholarly conferences throughout the coming year. The Commission's other exhibit, the giant brittle book, is also scheduled to attend a number of events, and in conjunction with the modular exhibit, has been successful in carrying the preservation message to some 30 different institutions and conferences since its inception. For a more complete description of the exhibits, contact Sonny Koerner at (202) 939-3400.

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NEWSLETTER INSERT

IMPLICATIONS OF ELECTRONIC FORMATS FOR PRESERVATION ADMINISTRATORS

This exploration of new responsibilities that will be required of preservation administrators in the evolving digital environment was written by Peter Jermann, Preservation Officer at Friedsam Memorial Library, Saint Bonaventure University, NY, after he attended the Electronic Formats Workshop of the Preservation Intensive Institute, August 1-6, 1993, at the University of Pittsburgh. Jermann based this essay on the presentations of Dr. Michael Spring, Department of Information Science, University of Pittsburgh, workshop instructor. The institute is one of a series of continuing education programs in library and archival preservation funded by the National Endowment for the Humanities.

As people concerned about the implications of electronic technology for preservation, we need to understand three basic concepts: (1) all digital information is coded information; (2) digital technology can be used as a tool for preservation; and (3) regardless of whether we exercise the options presented by number 2, we have to cope with analog and digital electronic records that already exist or will be produced.

(1) Digital information is coded information

The first concept, that all digital information is coded, means that in order to preserve digital information and provide future access to this information, we must also preserve the key that translates the code. Digital information is merely a series of 1's and 0's (bits) gathered into parcels of 8 (bytes) that are gathered into collections called files. The meaning of these bits, bytes, and files can be, and often is, arbitrarily determined by the information's creator. Though we may come to excel in preserving the physical media on which digital information is stored, without the key to decipher the information preserved, future access will require the services of a cryptographer.

The solution for those faced with the responsibility of transferring information to or preserving information in electronic formats is an awareness of and support for standards that define the meaning of digital information. We need to know who creates standards and how we can influence their development. We need to be aware of existing standards such as the ASCII standard (American Standard Code for Information Interchange) for text and TIFF (Tagged Image File Format) for graphics, as well as the hundreds of proprietary formats established by software vendors. Finally, we need to look to the future and support both the development and the use of emerging universal standards such as UNICODE (ASCII code + a possible several billion English and non-English national characters), TIFF and SGML (Standard Generalized Markup Language - a standard used to describe documents which may include textual data, image data or other data in predefined formats).

(2) Digital technology as a preservation tool

Digital technology can be used as a tool for preserving information currently in non-digital format. The uses of this technology include analog to digital conversion (for sound and video recordings), image to digital (for documents, books, photos, etc.) and text to digital (OCR/ICR - optical or intelligent character recognition).

In order to understand conversions to digital format, we must understand how the digital record relates to the original. What do we gain and what do we lose? All digital conversions are based on series of discrete samples of the original information, whether an analog recording, a page from a book, or a photograph. The completeness with which the original information is captured is determined by the distance of these samples from one another, either in time or space, (e.g., dots per inch, samples per second) and the quality of each sample taken. The more samples taken and the higher the quality of the sample, the higher the potential resolution of a digitally reproduced copy.

The quality of the sample directly relates to the size of the scale by which the each sample is measured. For example, if a color photograph is scanned into digital format, we could sample at three quality levels ranging from low to high. We can sample it as a black and white image (using only two values for any given sample), a gray scale image (up to 256 different values of gray per sample) or a full color image (up to 16.7 million different color values per sample).

Once we understand the relationship between the original information and its digitized copy we need to understand the limits and costs of the technology. What are the costs of information input, information storage, and information output? What information might be lost, or enhanced? What are the limitations of image to digital or audio to digital conversions? Once information is digitized how do we store it?

The quantity of information digitized represents its own limitations. The more information we save (higher sampling rate and/or more values per sample) the higher the cost of processing and storing that information. Storage requirements can be tempered by a variety of data compression schemes. As preservation specialists we must understand that compression algorithms can be lossless (no information lost on decompression) or lossy (decompressed information differs from the original compressed information). What do we gain and what do we lose in such schemes?

Once our information is digitized and compressed, how do we organize the data (see discussion on standards in part 1 above), and how do we retrieve it? What are the limitations of converting a graphic image of text, such as the scanned image of a page from a book, into keyword searchable, character based information? What are the advantages or disadvantages of CD-ROM? How stable is the physical medium?

Only when we understand the technology involved in the hardware and software, can we make decisions concerning the uses of digital technology as a preservation tool. These decisions must be guided by answers to the following questions:

- By whom and how will the information be used?
- Can digital technology achieve the quality required by these perceived users and uses at a cost we can afford?
- Will access to a digital copy increase or decrease demand on the original?
- Should textual information be digitized as an image, as is currently done with microfilm, as text that can be indexed and searched on a computer, or should it be digitized in both formats?
- How can we index or catalog the digitized information?

The answer to these questions will help us answer questions like the following:

- Is digital technology the answer to this particular application or should more traditional means be used?
- At what resolution should an image be scanned or an analog audio recording sampled?
- Should basic black and white printed text be scanned as a black and white image or as a gray scale image?
- Should we use a lossy or lossless compression to store our data?

(3) Coping with electronic records

As preservation specialists we must learn to cope with existing electronic records as well as those we produce through our preservation efforts. Preservation of electronic formats requires that we know and understand a) the logical format or code by which the information is translated to human terms; b) the technology that can read the information on the particular medium on which the electronic record exists; and c) the life of the medium on which the information is stored.

(a) Logical format. The importance of the encoding scheme or format of digital information places two requirements on preservation specialists. First, it requires that as digital information is collected we must acquire knowledge of the format in which it is stored. This knowledge must be inextricably tied to the electronic record through cataloging or other means. Further, it is necessary to insure that the specifics of the format are preserved somewhere (see part 1 above). If the format is peculiar to the records in hand, as may be the case with a custom-designed software application, then we must also obtain a detailed record of the encoding of that format and ensure that it remains tied to the data. Second, we must support the development and use of universal standards so that the problems associated with the existing standards lessen with time.

(b) Reading technology. Whereas the format tells us how information is arranged within a digital file it tells us nothing about the mechanism required to read the digital information from the particular medium on which it is recorded. Information regarding this reading technology, like the format or coding information, should be tied to the electronic record through cataloging or other means. We need to know and document the hardware or combination of hardware and software that enables us to read the electronic record from the particular medium in our possession. We cannot assume that all similar media require similar technology to read. Magnetic tapes, for example, can contain digital or analog information and can only be read by an appropriate machine. Floppy disks are an example of media that can be physically identical yet incompatible. Disks formatted on an Apple computer are not easily read on IBM compatible computers, nor are IBM formatted disks easily read on Apple computers.

(c) Life of the medium. Finally we need to understand that the life of the medium (magnetic tape, floppy disk, CD-ROM, etc.) on which electronic information is stored depends on a combination of two factors. The first is the rate of the medium's physical decay. How long is the medium capable of maintaining its information intact? The second factor is the life expectancy of the technology used to write to and read from that medium. Should this technology disappear the information on the medium becomes inaccessible.

This combination of factors affecting the life of a electronic medium requires the preservation specialist be diligent on two fronts. He or she must act in a traditional sense and monitor the condition of the artifact on which the electronic information is stored. When the artifact can no longer sustain the information, like a brittle book unable to support its printed message, it must be copied or its electronic image refreshed on the existing medium.

Unlike a brittle book, however, the preservation of electronic media requires that the specialist monitor the technology that placed the information on the electronic medium. The obsolescence of the brittle book's printing technology has no impact on its preservation. The obsolescence of an electronic reading technology can mean loss of access to the information stored with that technology. Consequently, in addition to monitoring the artifact the preservation specialist must monitor both the reading technology connected with the artifact and emerging technologies that will supersede that technology. It becomes his or her responsibility to migrate data to the newer technology before the old technology disappears.

Fortunately, a significant advantage of digital electronic data (though not analog data) is its ability to be refreshed, without loss, on its existing medium or transferred, also without loss, over a wire from one computer to another regardless of hardware and/or software differences. If the reading technology is properly documented (see part b above) any data produced by a given technology can be quickly identified en masse and transferred to a newer medium.